FOREWORD

In October of ’92 I received a large size, full color, glossy, 180 page government publication called America At The Threshold. It was sent to me because I had responded a few years before to a NASA solicitation for ideas for space. My best guess is that they originally queried me because I am both a patented inventor and a past member of the high IQ society known as Mensa. While reading the book, I stumbled across my name printed smack dab in the middle of page A-51. It was there because at least one of my ideas had passed the serial scrutiny of a number of special committees of judges. By this time, however, I had become a confirmed skeptic and had ceased to believe in NASA and the CIA, and I was getting mighty suspicious of apple pie Americanism.

Bill Kaysing’s book We Never Went To The Moon fine-tuned my suspicions of the Moon landings by pointing out things I had missed. For example, the astronauts’ boots left deep impressions in the soft dust, but the Lunar Landers left no craters nor did they sink into it. Thousands of photos taken on each of the missions never showed the millions of stars that must be b rillian tly visible on the airless Moon.

I also realized that much of the $40-billion cost for this production had probably been ferreted away, either squandered in the Vietnam "police action" and in the CIA’s "secret war" in Laos, or siphoned off to fill the back pockets of the producers. NASA ’s America At The Threshold is cover-to-cover propaganda about "Project Outreach" which I was horrified to discover is NASA’s grab for our grandchildren’s wallets ostensibly to produce a trillion-dollar MARTIAN HOAX that can bankrupt our already debt-plagued country.

For almost five months my erstwhile publisher constantly questioned NASA. If they hadn’t known about this book before, they sure knew then. The 25th (silver) anniversary of the safe return of the crew of the first Moon landing (Apollo 11) came and went without the expected NASA hoopla and propaganda. Instead, the usually unapproachable Apollo astronauts began a series of TV and radio show appearances. I directly attribute this to my book and this man’s activities. Unfortunately, he did everything but print the book.

In a prosecutorial mode therefore, I accuse NASA, the CIA, and whatever super-secret group that controls the shadow government of these United States of fraud on the grandest scale imaginable, of murder by arson, and of larceny of over $40 billion in conjunction with the Apollo program that allegedly landed men on the Moon. I also accuse them of violating a federal law against lobbying by government-funded entities and of serial murder of low-level NASA employees, witnesses, and other citizens who happened to be in the wrong

place at the wrong time. Such accusations seem incredible because none of us ever want to believe our governmental father is deceiving us. However, by the end of this book, even the most trusting reader will have no doubt that NASA MOONED AMERICA !

Note: Since I published, some of my readers have gone to great trouble and expense to teach me about the Federal Reserve hoax and the hidden controllers of the world's economy, money, and power. I must now admit that the Apollo hoax is to the Federal Reserve hoax as a firecracker is to an A-bomb.

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1 FX PICTURES

I remember watching the first astronauts land on the Moon and wondering why the TV pictures were so murky. We watched two blurry white ghosts, who did little or nothing while they lurked in the shadow of the Lunar Lander. NASA seemed to have lost 100 years of photographic progress. It was boring, but I believed! During the next few years I caught glimpses of subsequent missions as they flashed in color upon my TV screen, and I believed. The pictures improved with each mission and toward the end of the Apollo program the Moon buggy tore up the Moon's surface while NASA began to talk up a Martian adventure. I still believed in apple pie, the CIA, and NASA.

A few years later I saw the movie "Capricorn One". Its plot involved a CIA hoax about a manned Mars landing. Did I relate that story to our Moon missions? Nah! I still believed in NASA and the CIA. Years later, watching a TV show, I thought I saw the Moon flag ripple on the airless Moon. The worm of suspicion slid into my system.

I then began watching NASA film clips very closely and with less emotion. As those rose-colored glasses slipped lower on my nose I began to notice flaws in the pictures. The astronauts and their backpacks weighed less than 75 pounds on the Moon, yet they left deep footprints in the Moon dust and gravel. The blast of a rocket engine that lowered the 33,000 pound LEM (lander) to the Moon's surface left no crater. And apparently it didn't even blow away the dust beneath the foot pads. Strange! Here on Earth clear footprints usually require some type of wetting agent. There is no wet on the Moon!

Recently I read MOONGATE by William Brian and discovered that the flag actually did ripple during the Apollo 14 flag salute ceremony. That author procured that film clip in 1980 from movie newsreels in Hollywood.

When the Rover spun its wheels, the dirt and gravel sprayed backwards as it would here on Earth. But, in spite of the Moon's much lighter gravity, the dirt hit the surface just about as fast as it would here on Earth. The only tangible proof that we landed on the Moon were the pictures and 840 pounds of Moon rocks. The rocks, without the corroboration of photos, are meaningless, because they could have easily have been fabricated in NASA labs using high temperatures and pressures. I have been told that Werner Von Braun retrieved two cases of rocks using a U.S. Navy ship in the Antarctic years before the Apollo missions. The shipping labels on the cases said "NASA, Houston, Texas".

I began to closely examine every NASA picture that came my way and discovered that almost every picture or TV tape released to the public is flawed in some respect. All the pictures in this book have been published previously. The still pictures were taken with Hasselblads at that time the world's finest camera. As you will shortly see for yourself, they do not ring true whether black and white or color. I had to ask myself, "Why would anyone fake pictures of an event that actually happened?"

That's why I refer to them as "FX" pictures. In movie lore, FX stands for special effects. Where Hollywood employs the best technicians to create magnificently authentic-looking fantasies, apparently NASA employed amateurs who attempted to recreate the brilliant sunlight on the Moon by using spotlights in a dark studio. Many of the pictures have diverging or converging shadows which indicate two or more spotlights. The Sun throws only parallel shadows on Earth or on the Moon.

If you look at the backgrounds of most NASA pictures, there is a relatively sharp transition line where anything beyond becomes smooth and featureless. This is a sure sign of a grade Z studio backdrop. Every time the American flag is shown there is a great deal of light on it, even if it is on the shadow side of the Lunar Lander. Also, NASA never filmed either stars or planets. The reason is simple: before the era of computer enhancement the stars would have been impossible to fake accurately enough to fool the world's amateur astronomers.

The original TV pictures we saw were photographic horrors because the astronauts looked like ghosts. Why? Apparently the government-cleared TV cameramen filmed a magnified TV screen. In fact, as you will subsequently learn, there were no live TV transmissions during Apollo 11 & 12. The pictures were intentionally blurred to make us believe that the simulations we saw were real. Note: The pictures reproduced in this book include the date and the NASA number of the picture whenever possible so that you may order them directly from NASA if you wish.

NASA is now preparing to take us to Mars the same way they took us to the Moon. This time a small cadre of computer experts will astound us with photos created by the new digitized computer graphics which didn't exist in 1969. Next time we will have no way of determining the truth.

This new epic is called "Project Outreach" and it will feature new space heroes who will struggle to overcome all obstacles in our one-country race for Mars. The first segments of this serial, which we will be able to watch in the comfort of our living rooms, will show the construction of a permanent space base between Earth and the Moon, and the struggle will be against the cold and pitiless vacuum of space.

Next the astronauts will risk life and limb building the first base on the Moon. It will end with a successful Mars walk and will be the greatest made-for-TV movie ever. The budget — paid by us taxpayers — will be over a trillion dollars stretched out over a decade.

People reading this book have found many other anomalies in these and other NASA photos. I even have a report that when some of the color pictures are scanned the background dots in some areas are a different color which is indicative of a composite photo using pictures made with different brands of film. I have not added to the text all of these reports because that might prevent you from discovering additional flaws yourself.

Deadwood Dick

This picture of Nat Love (Deadwood Dick) was taken in the 1870's.

Compare this with "the Apollo ghosts" below that were allegedly sent back from the Apollo 11 mission.

Both astronauts are in sunlight, but one reflects blinding white light and the other is strangely dark.

Apollo Ghosts

1.1 The Gemini Fireproof Antenna

Wally Schirra and Tom Stafford are about to be rescued after splash-down on Gemini 6A. They claim to have made a rendezvous in space with Borman and Lovell, who were flying Gemini 7. From the front of the capsule we see the base of a long fiberglass whip antenna. It is completely undamaged, and it is not retractable, as the capsule cabin contains no antenna well.

The capsules came from the factory gleaming with a silver film (which is charred by temperatures over 5000 degrees during re-entry). Anything not shielded by the forward ablative coating will burn up. None of the other Gemini capsules showed whip antennas after splash-down.

This antenna responds to frequencies not used in space and would only be of value in locating the capsule after it landed. Once the capsule was found it would have no further value. Why do NASA apologists argue that the rescue divers installed it after it was in the

water? The only logical conclusion left is that this capsule never re-entered from space but was parachuted from a CIA cargo plane.

1.2 Cover Photo

NASA's official title of the picture on the cover is "Astronaut Collecting Lunar Samples, Apollo XII". NASA contends that Pete Conrad took it of Al Bean on 10/20/69. The NASA number is AS12-49-7278.

At any one time there were only two men on the Moon. Yet — as reflected in Bean's face-plate under magnification, Conrad is carrying no camera. Conrad has his left arm straight down and his right elbow is down with his hand near his navel. We see a flat background surface with the horizon sharply delineated. On Bean's visor we see Conrad and the horizon behind him closely matching the real one. If we examine Bean's shadow, as reflected in his visor, we know by its length that he is less than 10-feet away from Conrad. Therefore, we know there is no steep hill between them. But the camera on Bean's chest is being viewed from at least 8-feet above the ground. Since there is no camera stand reflected between Bean and Conrad either a camera boom was used or the man on the Moon is 10-feet tall, invisible and took this picture.

Here is a list of other anomalies:

1. On the upper left edge are two structural pieces that slant toward the ground and seem to be holding a spotlight. The ground between that spotlight and Bean is unevenly lit, but the brightest area is around him. This is consistent with a spotlight. The ground in back of Conrad is extremely well lit which is also consistent with studio spotlights. Sunlight in a place without clouds, trees, or hills is uniform.
2. Bean is holding in his right hand a polished piece of metal tubing that has no shadow side. Was a flash used in sunlight that is 20% brighter than Earth?

3. There is a second shadow that extends from Conrad forward and to his right. It is almost 180-degrees away from his regular shadow. NASA never told us that our solar system has two suns.

I consider this picture to be one of the most flawed of NASA's Apollo Project's filmed documentation because there are so many things wrong with it. A picture is composed only of light and shadow and by definition the shadow must be on the shady side away from the light source.

1.3 The Backdrop Begins

NASA titled this photo "Apollo XVI on the Moon." Just past the object of interest the landscape becomes featureless. As in most NASA photos the background begins abruptly. NASA states that this is because of the Moon's smaller diameter. Optical perspective is not dependent on the distance to the horizon. Charles Duke was standing next to a geological marvel and never saw it. Unless, of course, the marvel we are seeing here is nothing more than an amateurish backdrop for a simulated shot taken in a secret government movie studio. One NASA apologists claims to believe that the Rover is on a cliff edge. NASA claims it chose each landing zone carefully to avoid cliffs and craters.

The large rock in the left foreground is clearly marked with a big capital "C". The bottom right corner has a crease similar to that caused by wetting a folded newspaper. This makes it a showbiz "flap" rock, which the people who work in Hollywood studios throw at visitors. They used to be made from wet newspaper and paste and showed similar flaps. Stage rocks are usually placed by stage hands over similarly lettered markers positioned by the set designer. Did NASA really carry fake boulders and stage hands onto the Moon?

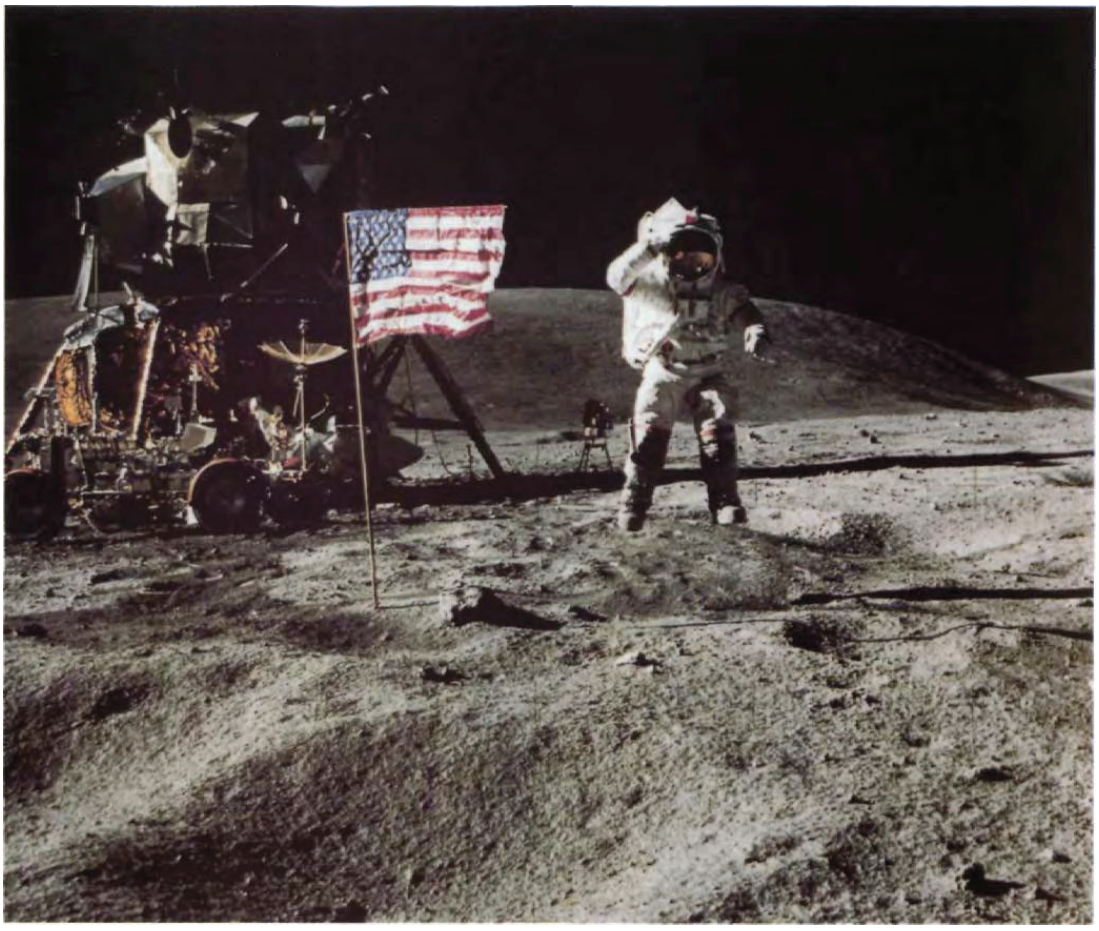
The shadows of Astronaut and the Rover are in a different direction than the rocks nearer the camera. Sunlight casts parallel shadows. I have no idea how this was accomplished. Notice also that the Rover has left tracks that show an abrupt right angle turn. Have you ever seen any vehicle that could do that? It looks like stage hands lifted up the front and dragged the Rover around to the left just before this picture was taken. Only a two wheeled hand truck can leave such a track.

Notice the sharp footprints and tire tracks. A man who has tracked various animals in the Australian desert pointed out that clear tracks in deep dust require moisture; otherwise they form only indistinct depressions. I've done some tracking of my own and I instantly knew he was right. The only clear tracks we can leave on a sand beach, no matter if the sand is fine or course, is near the water. There are some ultra fine man-made materials that will take a track at normal temperatures but I know of no dry natural soil here on Earth that has that property.

There can be no moisture on the Moon. Especially during the daytime when surface temperatures are about 250 degrees. Couple this with the vacuum of space (which drastically lowers the boiling point) and any water in the dirt would boil away in seconds. And yet, every picture allegedly taken on the Moon shows clear footprints.

Another anomaly is found in the fact that the upright gnomen is casting a very dark shadow right next to the "C" rock that is thinner than the diameter of the gnomen. Yet the shadow of the legs are about the same size as the legs.

The Rover has an antenna at the front end. The camera has placed range finding crosshairs on the photo. The top of the Rover's antenna was super-imposed over the second cross from the top left. If NASA landed men on the Moon why were the photos faked? On your last vacation, did you go to a studio and simulate the pictures you took?



1.4 Me And My Shadow

NASA claims this picture was also taken on the Apollo 16 mission. Notice that the surface of the hill in the background is not very bright. It is shadowed although there are no Moon clouds! That hill can only be a part of a very inferior and amateurish backdrop.

The shadow from the skinny flag pole is clearly visible at its base. If the thickness of that shadow is measured and compared with the diameter of the pole there is another reduction in size of an objects shadow. If that pole shadow is followed it terminates in the very thin shadow of the flag itself.

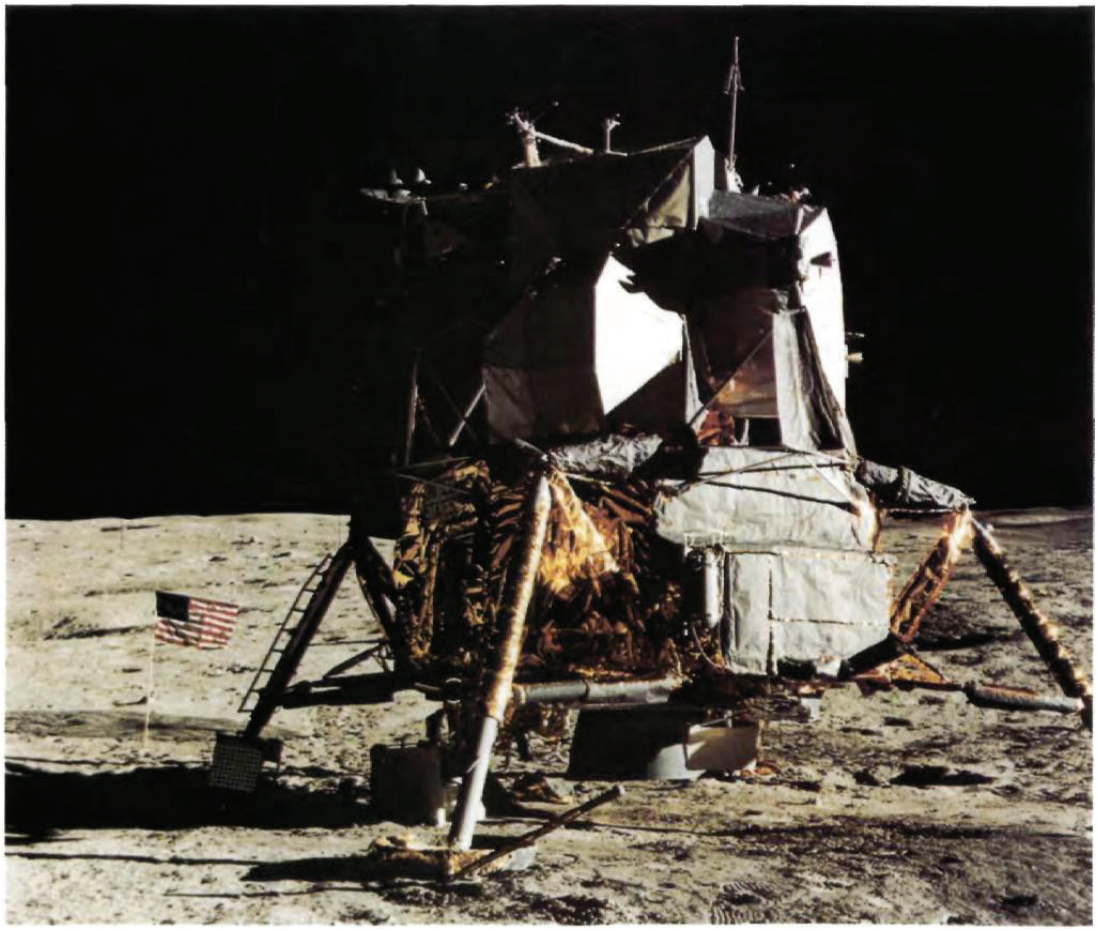
Inspection shows that the flag itself is lying away from the Sun. In the background is the LEM which is 32 feet in diameter. The LEM also has a very skinny shadow hardly thicker than the flag. Here on Earth shadows from the Sun are always proportional to the size of the object.

Nearer the foreground is a long dark line. Close inspection reveals it to be a line cord. It should lead back to the LEM but it disappears at the rock near the flag pole. If this cord was laid down on a crowded beach it would take hours before the foot traffic could bury it to this extent. There were supposed to be only two men on the Moon at any time. How many stage hands tramped about on this set to accidentally bury this line?

Since the flag is away from the Sun why is the side of it so brilliantly lit? Could there be another source of light? Did they carry power-hungry and heavy spotlights to the Moon? The LEM had only batteries! And why would you need spotlights where the Sun is 20 % brighter than here on Earth?

John Young has leaped about 18 inches in the air. We all know that white men can’t jump but this is ridiculous. Under the Moon’s 1/6 gravity his weight (suit included) was only 65 pounds. I am crippled and weigh over 200 pounds but I can jump 4 inches high. On the Moon this would be over 2 feet. You would think that youthful, physically fit Astronauts with "The Right Stuff could jump higher than this.

NASA apologists keep insisting that the flag shadow is his. However, for this to be true that shadow would also have to be much fatter. But what really takes the Booby Prize, is that he has out-jumped his own shadow. Since even a gazelle can’t out jump its shadow either light moves much slower on the Moon or men with "The Right Stuff" can move faster than light. However, no matter how you cut the cake, Young still has no shadow! The only solution to this problem is that he, just like that Rover antenna, was also super-imposed.



1.5 No Crater

This picture is titled "Apollo XIV on the Moon." Notice the footprints in the soft Moon dust. They extend under the LEM almost to the rocket engine's shroud. The LEM weighed almost 17 tons and had only one central rocket to decelerate this mass during landing. The engine had a thrust of 10,500 pounds, and even if the nozzle throat had a diameter of 3 feet, the exhaust pressure would have been close to 10 psi (pounds per square inch).

A common leaf blower generates about 1/2 psi yet it will blow away loose dirt and dig a crater in the ground. This monster not only landed without digging a crater but it didn't even blow away the loose dust. Without atmosphere to hinder it, can you imagine what the blast from a large rocket engine would do to dust and small rocks in the vacuum of space? Yet we find crystal clear footprints in the dust at the extreme center foreground.

The rocket shroud is in pristine condition. It's not discolored and shows no signs of having been heated. How can a rocket engine fire and not heat up the shroud? The engine

itself appears to be positioned off-center to the front left of the LEM. If anyone had dared to fire this stupid looking and ungainly machine as it descended, the eccentric position of the nozzle would have exerted an unstabilizing torque and caused the LEM to pinwheel onto the Moon's surface no matter how many tiny thrusters were fired trying to keep it vertical.

Here on Earth our fluorescent atmosphere shields us from the direct rays of the Sun and scatters photons in every direction, giving some light to even well-shadowed surfaces. The word fluorescent is not used lightly. The vacuum on the Moon eliminates these effects. Notice how well you can read the words "UNITED STATES" on the shadow side of the LEM! On page 241 of Aldrin's Men From Earth, he clearly states,"... with no atmosphere, there was absolutely no refracted light..." Therefore there had to be another source of light. This is consistent with other NASA photos that always show brightly lit flags and the words "UNITED STATES".

The foot pad on the extreme right disappears into the picture's border. Take a pencil and sketch in the rest of the leg and the foot pad. Then duplicate the foot pad shadow we see on the left leg. Why isn't that shadow on the page? Also, the shadow of the landing strut in the foreground has a shadow less than half its diameter.

Last and most important is that the left side of the background is brilliantly lit while the right side is dim. Is this another unreported geological miracle where reflective white dirt meets dull red dirt in a straight line? Or is this photo just another simulation?

Hero's Medal

Although a number of Russians preceded him, Alan Shepard was the first American to enter space.

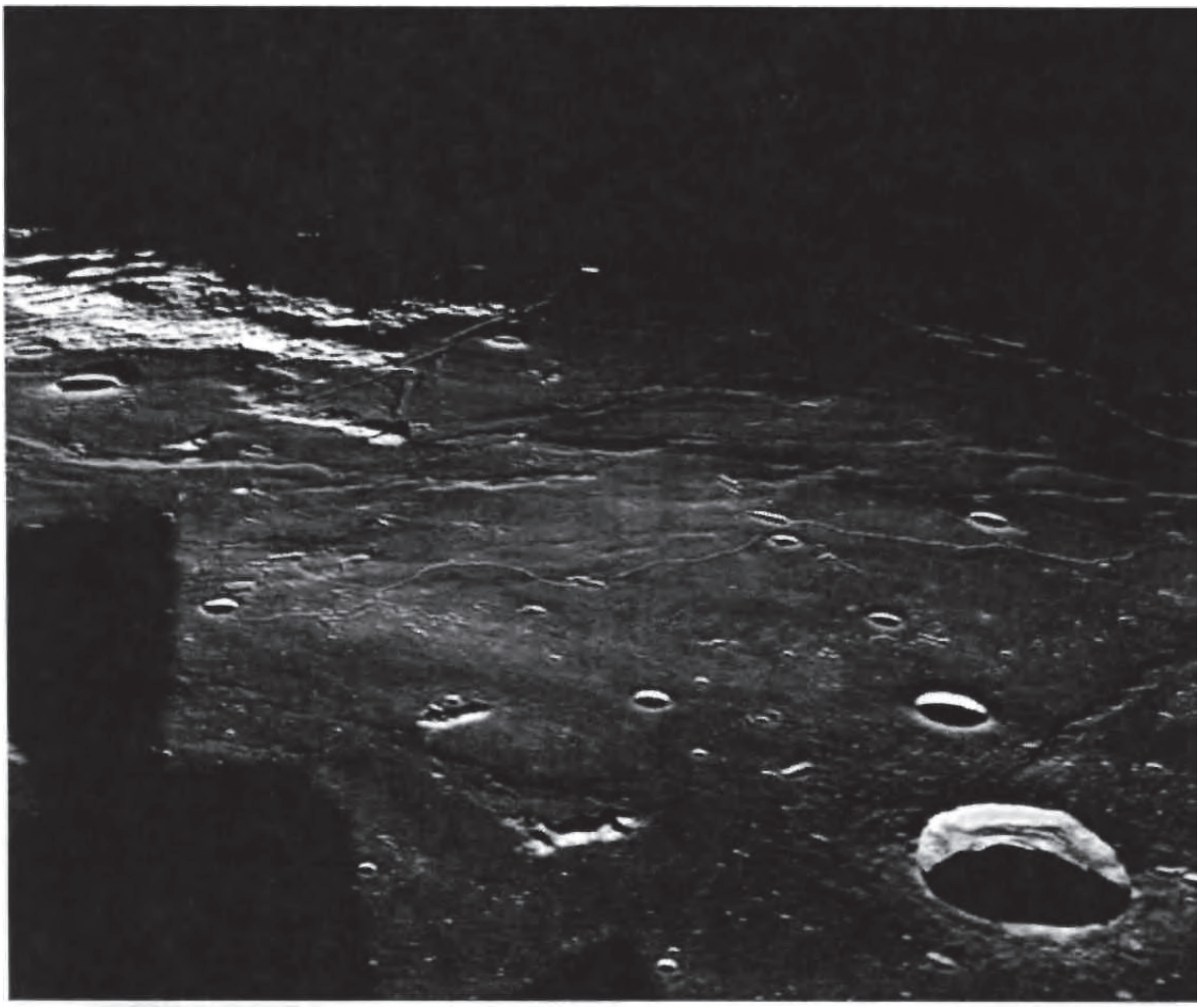
NASA created a special "distinguished service medal", and President Kennedy pinned it on. Look at this man grin!

Glum Chums

Is this the look of three men who had just returned from being the first men to walk on the Moon? The Apollo 11 crew have just returned to Earth and are talking to President Nixon from quarantine. This group is definitely not a bunch of happy campers. Could they feel ashamed about something they didn't do?

1.6 The Shadow Shows

This unbelievable picture, allegedly taken from the Apollo 11 command capsule, is the apex of chicanery. Despite this, I have seen it in at least three books including Collins' Carrying The Fire, where he claims that the picture is of the Sea of Tranquility and shows the landing zone. The shadow in the lower left corner is supposed to be from the engine shroud whose diameter is 8.5 feet as it orbits 69 nautical miles (79 statute miles) above the Moon. A few readers have told me that this shadow's shape matches the LEM's small directional thrusters which are 6 inches in diameter. I agree!



The sun, however, has a diameter and the rays emitted from either side of it tend to cancel out sharp or definite shadows in some distance considerably less than 79 miles. Commercial airliners that are ten times larger fly a few thousand feet over our heads, yet no one ever sees a definitive shadow. Apparently we have an astronaut who casts no shadow and an engine nozzle or, worse yet, a small thruster that casts a shadow over 79 miles away. What kind of a wondrous place is this Moon of ours?

2 THE TV COVERAGE

The one word never mentioned during the very first moon landing was the word "simulation". Given the temper of the times, it might have produced full blown revolution. The simulation story is relatively recent and probably a direct response by NASA apologists to Bill Kaysing's original detective work. Why would NASA have needed to use any simulated film if they really landed on the Moon? Looking back at it now I can see that every photo was simulated, but back then we believed that it was the distance that screwed up the coverage. There had to be some reason, because we knew NASA had the finest equipment.

The pictures were dark one second and bright the next. A single picture might show one astronaut blazing with light while his buddy, 10 feet away and also in the unfiltered sunlight, would be troll black. Most of the pictures resembled those of night scenes on a "grade Z" science fiction flick where the buxom girl, whose bodice has been ripped by the aliens, keeps disappearing into the gloom just before we can get a good look.

2.1 The Blurry Pictures

The blurry white ghosts and the black trolls were busy doing unusual boring things while speaking NASA-ese at each other. "Did you put up the poop-ding on ramus?" "No, the clavrick has exceeded port 19!"

The astronauts were alternately hiding under the shadow of that ungainly and exceedingly ugly LEM, and then popping out into the sunlight to gambol around. They were blindingly white one second and dark the next, and not one picture was ever crisp. It was as if a blurry eraser had been applied.

2.2 Malicious Intent

The lousy pictures were intentional! Indeed, this was imperative so that no one could critically examine those first pictures when our critical facilities were at their peak. Once a premise is accepted by our EBS, we hardly ever re-examine it.

It was years before I suspected NASA of fraud and thought to re-examine the pictures for the first few missions. By that time they were hard to find, as TV stations preferred the clearer color shots allegedly taken on later missions. The pictures were just more obfuscation used by NASA to keep its gravy train rolling through this land that once was flowing with milk and honey.

2.3 The Big Screen

Much of the blurring was specifically induced by NASA's insistence that the TV networks had to broadcast directly from a huge TV screen in the operations room. In other words, they had to take a picture of a poorly-magnified picture! Fortunately for NASA, the major networks accepted this mandate. Also, even more fortunate, in 1969 there were no TV screens that large, no matter how much you could spend. If you wanted a bigger screen you bought an optical system that strapped onto a standard set and used mirrors and lenses to magnify the picture. The price paid was in clarity. First, there was a more than proportional loss in brilliance of the screen. And second, the picture was composed of giant grains with the inevitable result of dim blurry pictures.

Within 72 hours after the splashdown of the Apollo 11, Bantam Books in conjunction with the New York Times, had the presses running on John Noble Wilford's We Reach The Moon. On the inside front cover is one of those blurry pictures that show Neil Armstrong's foot about to hit the Moon. The only way to take that shot was by either having a moon photographer lying on his belly or by having a camera attached to the adjacent landing leg. Mr. Wilford, according to his book, was an insider. Here is a quote found on the publishers page.

> ABOUT THE AUTHOR
>
> JOHN NOBLE WILFORD is the leading aerospace reporter for The New York Times. He has covered every phase of the space program and every Apollo shot leading up to the epochal moon landing. WE REACH THE MOON is Mr. Wilford's definitive account of the incredible space achievement, from its beginnings with the faint beep-beep of Sputnik to its conclusion at the Apollo 11 splashdown.

On the frontispiece adjacent to this picture is a boxed blurb that reads:

> ABOUT THE COVER PHOTOGRAPHS
>
> Front cover photograph (NASA): left to right-Neil A. Armstrong, Michael Collins and Edwin E. Aldrin, Jr.
>
> Inside cover photographs were taken directly from television screens, which provided the first visual documentation that man had landed on the moon. A: Neil Armstrong

> steps onto the surface of the moon. B: Buzz Aldrin stands on the moon. C: First moonscape taken by man on moon. D: Aldrin and Armstrong in front of the module on the moon. E: The American flag goes up on the moon.

Now why did NASA institute this "picture-of-a-picture" policy when they easily could have popped in some coaxial connectors and jacks so that the TV crews could take copies of the broadcasts directly before optical magnification destroyed the originals? Oversight? Extreme stupidity? Or the cunning of the fox loose in the chicken house?

Why didn't the experienced TV news people show the NASA technicians how simple it would be to correct the pictures? Why did the networks let them get away with this? Why didn't they take their complaints to the public if NASA officials refused to listen? And why didn't they get direct copies of the clearer pictures which NASA must have taped as they arrived in Houston (whether such pictures were actually from the Moon or previously prepared simulations)? Even after all these years, we have never seen the clear pictures which NASA must have stored in their archives. Why has the media seldom attacked this sacred cow called NASA?

2.4 More on TV

At the time I wasn't sure whether Apollo 12 (from 11/14/69 to 11/24/69) was "live" or not because I wasn't excitedly waiting in line to see more blurry exercises. I dare say neither was anyone else. Thinking back on it, almost everybody had the same complaint -lousy pictures. According to my recent research, however, there were no live TV broadcasts of either Apollo 11 or Apollo 12. If true, this means that the incredible space achievement we watched was a ghastly, ghostly joke perpetrated by those masters of the hoax — NASA.

Richard Lewis writes about the Apollo 14 landing: "Mitchell then descended to the surface and Shepard collected a contingency sample about 25 feet from the LM. He then set up the television camera on a tripod about 100 feet away. He was careful to keep the lens away from the sun, which was what had blinded the Apollo 12 camera. Now, for the first time, there would be a televised record of man on the Moon."[1] Gee! Imagine that: a guy with "The Right Stuff", after all that training, doing a dumb thing like pointing a TV camera directly at the Sun. Hard to believe!

So, what were they showing? We must have watched simulations! Not only did I not realize that at the time; no one else I know did either. Did you? But we were only taxpaying outsiders. The bigger fools seem to be the professionals like John Wilford, The New York Times, and the TV journalists. They fell for it hook, line, and sinker.

[1] p. 187, THE VOYAGES OF APOLLO, Lewis, 1974, Quadrangle

To add insult to injury the later pictures were still bad. Richard Lewis wrote about the Apollo 14 TV: "In the television pictures that came to Earth from 238,000 miles away, the explorers looked like bulky white ghosts against a black sky, cavorting about a strange landscape of dunes and craters ..."[2] Sounds the same as the first pictures that the astronauts didn't take during the Apollo 11 and Apollo 12 missions.

In Footprints on the Moon, the authors have this to say about Armstrong as he descended the Lander's ladder. "Suddenly he was standing on the porch of Eagle, beginning tentative steps down the nine rungs of the ladder. On the way he pulled a lanyard releasing an equipment shelf and a television camera."[3] Why do I get the feeling that NASA will always tell whatever lie is handy?

This is government newspeak at its peak. When is the first picture, the first picture? The only pictures that NASA didn't dare fake (and eliminated entirely) were pictures of the stars and planets. NASA realized that millions of amature and professional astronomers around the world would see these pictures, and if there were any discrepancies NASA's Moon cat would surely claw out from NASA's bag of tricks.

NASA did build a planetarium at their secret Mercury, Nevada base and attempted to use it for faking the stars. But it didn't work. A planetarium projector uses a bright lamp bulb inside a sphere that is pierced to allow dots of light to radiate up to the hemispherical roof of the circular building. The dome must be painted with a highly reflective paint so that the "stars" are visible.

Unfortunately for NASA, planetariums only work in the dark. One small spotlight completely destroys the effect. How could you film the astronauts and their equipment in the blazing sunlight on the Moon if you dared not light the set with arc lights?

If NASA had pretended to send the astronauts into a lunar night, the problem would have been worse, since the LEM used only batteries for power, and batteries don't run spotlights very long. Leave your headlights on for a while when your car is parked if you think I jest. And car headlights are birthday candles compared to serious spotlights. So after spending a fortune (ours) to build that planetarium, they found it was unusable. Then they were reduced to obfuscating the brilliant stars and planets of space by having the astronauts pronounce them as dim and fuzzy, and they were forced to maintain that lie down through the years. Today, a computer using enhancement and digitized graphics could fool the world's greatest field astronomer. But this is now, and that was then.

Added note: Aron Ranen of Third Wave Media who was funded by a grant that probably came from NASA, made a video that was supposed to prove that NASA did, indeed, go to the Moon. He was received with open arms by NASA, and in creating his video titled "DID WE GO?"discovered that all the audio tapes from the Apollo missions had disappeared.

[2] p. 188, Ibid.
[3] p. 206, FOOTPRINTS ON THE MOON, Barbour, 1969, The Associated Press

Jim Collier, before he died, told me that the plans to the Rover, the LEM, and the huge engines that powered the Apollo space craft are also missing. I wonder what the odds are against the contractors losing the prints and NASA losing both prints and tapes.

3 ASP

The asp is a small, venomous cobra-type snake found in Egypt. It is historically famous for being Cleopatra's accomplice in suicide. She chose to clasp the asp, and the little viper accommodated her by nipping her breast. Like Cleopatra, we must be suicidal too, because we have been grasping another sneaky snake to our Federal breast for over thirty years. It is also doing its aspy thing. This ASP is an acronym for "Apollo Simulation Project", which was created in 1961 and operated by the DIA (Defense Intelligence Agency) to "help" NASA with their technical problems by establishing a totally simulated moon mission.[1]

ASP was a total secrecy project along the same lines as the Manhattan Project of World War II. The Manhattan Project ultimately employed some 300,000 people and hardly a word was leaked out. It served as a proving ground for security techniques and personnel manipulation on a broad-based program that to this day hasn't failed. To have gone to this much trouble that early in the program is a sure sign that NASA knew that no one was going to the Moon.

It is difficult for the average person to believe in a huge governmental conspiracy because they know the difficulty people have in keeping small secrets. They visualize a few thousand people involved and believe it is virtually impossible to keep them quiet indefinitely. Anyone who knows about Air America, the CIA-controlled largest commercial air fleet in the world, should hardly be surprised. As Bill Kaysing says, "Air America is noted for its two distinct types of Alumni: The silent and the silenced."[2]

The ASP base was constructed on land controlled by the (then) Atomic Energy Commission and surrounded by other military bases. Scattered throughout these arid Moon-like properties near Mercury, Nevada are super-secret site after secret site. Top level management was provided by CIA spooks. Interface personnel were hired as needed and paid top dollar and then released as necessary (with the required "never tell" NASA warnings backed by the muscle of the CIA).

Picture this: a cavern on that base with an elaborate sound stage, code named Copernicus, built and outfitted with everything necessary to simulate moon pictures. It was named by someone with little knowledge of history after a crater on the Moon. That crater was named after an early seeker of cosmic truth, Nicolaus Copernicus, so this cognomen for

[1] p. 54, WE NEVER WENT TO THE MOON, Kaysing, 1981, Desert Publication
[2] p. 61, Ibid.

this nefarious studio is puzzling. However, there may be something in universal justice because this studio soon became "Cuss' in the base vernacular because of the problems that developed after CIA amateurs tried to make Hollywood-style FX.[3]

> "Also installed at the "Cuss" base was the true master control center of which the so-called Mission Control and the Spacecraft Center at Houston were merely satellites or slaves. The master control of Cuss (MASCONCULL) collected all data, programmed it into a computer which then coordinated the entire moon landing simulation. Since all releases were by well-edited tape, there was no chance of a blooper. Again, the total control of news by the American corporate state set an effective precedent for the totally controlled output of MASCON-CULL. From prelaunch countdown to the final descent to the ocean, all sound and video transmissions emanated from the flawless and mechanistic heart of a specially modified IBM 370-C computer."

If you don't believe that some central news agency distributes the news to the TV stations then channel surf on the major channels during the six o'clock or eleven o'clock news. More often than not, the same story is being broadcast at the same time, give or take a few ticks of the clock.

Today we would have no problem with the idea that a huge mainframe computer could control and handle an entire show of this magnitude from prerecorded tapes. Had anyone suggested the idea of deceit in 1969, people would have thought the person to be crazy. However, the Apollo serials were successfully aired, proving that an IBM 370-C computer could and did handle the show from prerecorded tapes, radio data, messages, TV pictures, etc.

The astronauts were very carefully led into the intrigue one at a time and were told only as much as was required for their mission. They could either go along or get along. If there was even a doubt as to their total loyalty to the program, the dissidents were sidetracked out of the mainstream.

After the Grissom-Chaffee-White incineration, I hardly think anyone would not have joined. One hand offered fame, money and power. The other hand offered a Federal funny farm or death. In this world there are peaceful nations, military nations, and police states. We are the only one that brags we are the first but have always been the second and are now rapidly evolving into the third.

The news and TV shows indicate every day that our government confiscates property and even "arrests" money, cars, houses, and other inanimate objects of value on the mere presumption of guilt as reparations in the drug war. This, to my mind, is martial law at its worst, but our press never mentions it to us.

[3] p. 62, Ibid.

Bill Kaysing, a former employee of Rocketdyne, reports that the Saturn 5 Moon rockets held a cluster of five B-1 engines instead of the more powerful, but totally unreliable, F-1 engines. Each B-1 produced a thrust of 150,000 pounds while a single F-1 produced ten times as much. Had this substitution not been made, the moon rocket "in its designed form would have weighed 6,000,000 pounds, or 3,000 tons fully loaded. This is the weight of a U.S. naval destroyer, further pointing out the total impracticality of the venture."[4]

Thus, the stripped down moon rockets that actually blasted off from Kennedy weighed about 300,000 pounds and were light enough for the five B-l's to get airborne. Here Bill Kaysing and I part company, because he believes that the astronauts were never launched. I say that they had to go with the big bird. The very danger of explosion was the reason. If a rocket had blown away on the pad then NASA would have had three live astronauts to deal with instead of three atomized corpses.

Such a type of accident would have created immense problems for everyone. Think how nervous it would have made the surviving astronauts knowing that their buddies were whacked to keep a secret? Surely one of them would have run to the press, to avoid the possibility of a similar fate in the near future. It's one thing to die in a flight or a fight. That's a bit glamorous. But to be slaughtered like a sheep is something else again. Had NASA done it any other way, the rest of the astronauts would have panicked. Remember, these were test and combat fighter pilots who took risks as often as necessary. Just as long as there was a good chance of a liftoff they would risk the ride. Also, they had been riding the B-1 engines for years during the Gemini Program.

I believe that each mission was on sequential tapes and programmed into the computer weeks before the liftoff. The immense number of simulations took months to create, and probably more time to carefully edit the simulations and weave them into the fabric of the next Apollo mission.

Once the simulations were prepared, all that was left was to provide the distraction that is vital to con-man and magician alike just before the deception begins. In this case it was the public launching at Cape Canaveral (now Cape Kennedy) that provided all the flame, fury and flash that any magician could ever ask for. It focused the attention of billions of people around the world on the launch while diverting us from the scam.

The next time the ASP strikes it will be to take us to Mars via digitized graphics and computer enhancements, and no one will be able to prove it's not real.

[4] p. 63, Ibid.

4 NASA'S HISTORY & POLITICS

A little over thirty years ago the popular new President, John Kennedy, was besieged by events completely beyond his control. Castro had taken Cuba away from a tyrant named Battista. Both the Mafia and the CIA were frothing at the mouth, the Mafia because it had lost a splendid source of casino income, and the CIA because a ragamuffin Cuban Communist and his army had taken power on an island a few miles off our coast.

Kennedy had barely settled into the oval office when the Russians followed up with their Sputnik success, and, on April 12, 1961, sent Yuri Gagarin into orbit on Vostok 1 for 108 minutes. If that wasn't enough, that same week the CIA botched the Bay of Pigs landing. Led by the CIA, a ragtag battalion of Cuban expatriots was supposed to reconquer Cuba and make it safe for democracy. Also involved were the CIA and the CIA's old World War II partners, the Mafia.

On May 25, 1961 Kennedy broke Presidential precedent and delivered a State of the Union message to a joint session of Congress. It was necessitated by racial tensions, CIA problems in Laos (later called our secret war), CIA problems with Cuba, and a whole gamut of other foreign entanglements — all involving the CIA.

Kennedy sought a national distraction. He also hoped to regain American prestige by asking Congress to drastically expand the space budget at a time when Congress was actually decreasing military spending and trying to cut back on other expenditures. Some sections of his speech are printed below.

> "I believe we possess all the resources and talents necessary. But the facts of the matter are that we have never made the national decision or marshalled the national resources for such leadership. We have never specified long-range goals on an urgent time schedule; or managed our resources and our time so as to insure their fulfillment.
>
> Recognizing the head start obtained by the Soviets with their large rocket engines, which gave them many months of lead time, and recognizing the likelihood that they will exploit this lead for some time to come in still more impressive successes, we nevertheless are required to make new efforts of our own.
>
> For while we cannot guarantee that we will one day be first, we can guarantee that any failure to make this effort will make us last.

> We take the additional risk of making it in full view of the world. But as shown by the feat of Astronaut Shepard, this very risk enhances our stature when we are successful.
>
> But this is not merely a race. Space is open to us now. And our eagerness to share its meaning is not governed by the efforts of others. We got into space because whatever mankind must undertake, free men must fully share.
>
> I therefore ask this Congress, above and beyond the increases I have earlier requested for space activity, to provide the funds which are needed to meet the following national goals: First, I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to earth. No single space project in this period will be more impressive to mankind or more important for the long-range exploration of space."

The space project became extremely political the instant Sputnik passed over our heads emitting annoying pings. The pings were perceived as the sound of danger, evoking memories of the whistles attached to World War II bombs. And just like the whistles on those bombs, the pings were psychological warfare. That was how we entered the space race.

General Eisenhower was the Supreme Commander of the Allied forces during World War II before he became our President. Under pressure fueled by Sputnik, he signed an executive order that mutated a quiet aircraft and design facility called the National Advisory Committee for Aeronautics (NACA) into what would become an insatiable monster called NASA. Ike wasn't too thrilled with the projected costs, and although he wanted our space program in civilian hands, he directed that only military test pilots be allowed to fly the coming rockets.

In January 1959 NASA began a search for the chosen few who would become our first astronauts. They scrutinized the military records of all the current test pilots and then culled one hundred and ten names from the various lists. Next, a committee whittled the list down to thirty-two and those men underwent extensive tests and interviews until only seven remained. These were the men with "The Right Stuff!"

When Republican born and bred President Eisenhower left office, he uncharacteristically tried to warn us about the military-industrial complex but we paid no attention. He gave a speech in which he said, "In the councils of government we must warn against the acquisition of unwarranted influence, whether sought or unsought, by the military-industrial complex."

He also should have warned us that the military-industrial complex had control of the CIA which President Harry Truman created after World War II to stave off the fatal hug of the Russian Bear. Had Truman been a closer reader of bureaucratic history, he would have known that "intelligence" organizations have a way of inevitably expanding themselves into covert actions. Then by infiltration and blackmail they become a forceful shadow over

the very government that gave them life. Witness the recent revelations concerning the transvestitism of the FBI's J. Edgar Hoover.

Shadow governments become more totalitarian year by year. Ike also might have warned us about this, and the fact that their sometime handmaidens, the academic, legal and medical professions, are also complexes that bolster and protect these entities. The story of that period and the political ramifications from our expanding cold war with the Russians is best summed up by the authors of an excellent contemporary book on NASA, Journey to Tranquility, printed in 1969 shortly after the Apollo 11 flight.

> "The concepts of politics and war may seem to defile the beautiful picture of brilliant thinkers acting out private dreams. But it is these that gave the journey to Tranquility a troubled, uncertain and sometimes sordid passage."[1]
>
> "Some politicians built careers on it; others lined their pockets from it. Whole corporations survived on the strength of it, as tiny groups of men decided where its billions of dollars would be distributed."[2]
>
> "The builders of Apollo were not technicians at work in a laboratory insulated from the world. They were soldiers in an age when technology has become warfare by other means."[3]

And its authors Young, Silcock, and Dunn wrote these words.

> "Long before the satellite got off the ground, it became the object of political and military wrangles of the most virulent kind. When it finally reached its destination, it was no longer a triumph of science. It had been transformed from a box of technical tricks into the obsessive tool of cold-war politicians. There could have been no apter beginning to the real history of America's great space adventure."[4]

Immediately after Sputnik we were playing a losing game. We could orbit a tiny, tinned toy and they would answer with a big, heavy, mean machine. They had Cummins diesels and we had Volkswagens. Our Mercury Program popped Alan Shepard up in ballistic flight for all of 15 minutes. We hailed this, even though we could not achieve a true orbit. Their cosmonauts were breathing air at normal atmospheric pressure (14.7 psi), but ours were forced to use 100 percent oxygen at 5 psi. A shell strong enough to hold normal pressure in space was much heavier than our rockets could then lift.

The hysteria caused by Sputnik destroyed the logical developmental course we should have followed in attempting to reach the Moon. In his book, Angle of Attack, Mike Gray, writes how we should have flown "the X-15 to the edge of space; then build an 'X-16' that

[1] p. 3, JOURNEY TO TRANQUILITY, Young, Silcock & Dunn, 1969, Doubledav
[2] p. 4, Ibid.
[3] p. 4, Ibid.
[4] p. 41, Ibid.

would fly into orbit; then an 'X-17' — a space shuttle — that would carry cargo; use the shuttle to build an orbiting space station; and then, say about 1985, depart from there on an expedition to the moon."[5]

In due time our second astronaut, Virgil Grissom, spent 16 minutes in ballistic flight. But two weeks after that the Russians upped the ante by putting a cosmonaut in orbit for over 25 hours. Six months later John Glenn finally boosted into orbit, into fame, and eventually into politics, by staying up for almost five hours. Three months after that Scott Carpenter duplicated, almost to the minute, Glenn's ride.

Two months later, on August 11 and August 12, 1962, the Russians really played hardball by sending up two cosmonauts in two separate birds. They also had the nerve to add a lot of insult to our injury by staying up for 94 hours and 71 hours respectively. Plus another first — they made a rendezvous with each other!

Things were quiet for a while, and then on May 15, 1963 we orbited for over 34 hours. A month later the Russians played "one-upmenship" and within two days sent up another two birds. The first one stayed up 119 hours, and the second carried the first woman into space, Valentina V. Tereshkova, who orbited for 71 hours.

Then rub-a-dub-dub the Soviets sent up three men in a big, big tub. Six months later we got two men up in our own washtub with the first shot of the Gemini Program. But we finally had the bit in our teeth. We were going to win that space race no matter who it killed or how much the cost.

The decision to go to the Moon was not made by President Kennedy but by NASA itself. A man named George M. Low pressured an internal NASA committee into accepting that goal.[6] It was the tail wagging the dog that day when NASA set its own agenda to start the Apollo Program. Nothing has changed since!

Had rocket expert Wernher von Braun been allowed to fire off his rocket in the fall of 1956 we would have orbitted the first satellite. However, it was politically incorrect to use former Nazi expertise. Politically, our great leaders desperately wanted the Navy to be first with an all American-made Vanguard rocket.

In the early '60s the only technicians who actually knew how to build rockets were those harvested up by the army from the German V2 Program. They were all working in Hunts-ville, Alabama on our missile program and miraculously, the military, an organization rarely known to give up the spoils of war, released them to NASA.

Just as its predecessor, the Nazi V2 missile project in Norway, had been taken over by the Nazi SS, ours was also held in thrall by the CIA. How this machination was accomplished and maintained is not known, but as the tiger is known by its stripes, you can bet that whenever big bucks are involved the CIA will be there. And NASA bucks are still big!

[5] p. 41, ANGLE OF ATTACK, Gray, 1992, Norton
[6] p. 65, JOURNEY TO TRANQUILITY, Young, Silcock & Dunn, 1969, Doubledav

The estimate given to Kennedy to put a man on the Moon was less than 20 billion dollars. The final cost, if tallied by the total expenditures of NASA from 1962 to 1973 was over 39 billion.[7] This is about 200 billion 1990 dollars.

Norman Mailer said of the Apollo Project that he couldn't decide whether it was "the noblest expression of the twentieth century or the quintessential statement of our fundamental insanity."[8]

Some contemporary critics called NASA's Moon project a "Roman Circus". However, I feel that term is a little too strong. "Space Opera" has a better ring to it. First there was the terrifying quasi-cremation of three astronauts on Pad 34. Then in each of the manned missions that followed serious problems developed, but each time, in the nick of time, American astronauts and/or unsung NASA geniuses saved the day!

After the Apollo 11 landing, the American public began to ignore the subsequent landings. Congress was getting a little shaky because of the CIA's secret Laos war and the Vietnam police action, racial rioting, hippie rebellions, and student demonstrations. Our leaders were working overtime trying to throw a great war in Vietnam, but many of the kids from farm and slum, the backbone of all our previous armies, didn't want to come to the party. Tens of thousands of draft dodgers were leaving the USA for Canada and other parts unknown. The legacy of Vietnam still troubles this country.

Potential draftees seemed to know instinctively what took me another twenty years to find out — that basically Vietnam was a CIA war over who would control the worldwide distribution of heroin from the Golden Triangle.

NASA had planned the first manned landing sometime in October 1967. There were three very political reasons for this schedule. The first was that the Russians were expected to execute a Moon landing to commemorate the fiftieth anniversary of the Bolshevik Revolution. The next because 1968 represented the beginning of a period of intense solar flare activity. The last because it could affect the coming Presidential elections.[9]

The American public never quite caught space fever. Yes, they cheered on the launchings, but by Apollo 12, the second landing, even America's patriotic silent majority began to question the necessity of more Moon shots. There is a saying by the journalists who work in Washington DC that the letters "N.A.S.A." stand for "Never A Straight Answer". Despite this, NASA continues to run amuck.[10] In May 1995 Congress reduced their budget to its 1961 level. I believe it was because I had spent over two years sending copies of this book to any member of Congress who seemed the least bit rebellious. That tremendous decrease in budget didn't even slow them down. I can only conclude that they are being funded directly by the Federal Reserve a group of private banks.

[7] p. 54, FOR ALL MANKIND, Hurt, 1988, Atlantic Monthly Press
[8] p. 15, Ibid.
[9] p. 80, MISSION TO THE MOON, Kennan & Harvey, 1969, William Morrow & Co.
[10] p. 43, Ibid.

However, NASA's public relations department was equal to the task. They kept grinding out action scripts. The liquid oxygen storage containers on Apollo 13 exploded between here and the Moon. Apollo 14 had trouble with the LEM while landing on the Moon. On Apollo 15 they were drowning in the capsule, and Apollo 16 suffered strange vibrations. Apollo 17 saw the end of the space opera despite NASA's previous plans for many more landings.

In the meantime, we were being devastated by racial rebellions, campus riots, and a simmering anger as the poor began to realize that they paid most of the freight for all these grandiose adventures.

There was a slight surge of interest when the "Rovers" were introduced. They too soon grew boring despite the fact they were now broadcasting live color TV. Had we known at the time that each throwaway Rover costs over 12 million dollars we probably would have had more riots.

Also the end of the Apollo Program saw a shift in direction from the professed scientific toward military and commercial ventures. Harry Hurt III says it succinctly:

> "Henceforth, the space agency paid only lip service to the noble theme etched on the plaque the Apollo 11 astronauts left on the moon; We came in peace for all mankind.' The first series of shuttle flights pioneered the commercialization and militarization of space, forsaking manned exploration of the solar system to concentrate on the pursuit of profits and the development of a Strategic Defense Initiative (SDI), also known as 'Star Wars.'[11]

Perhaps Hurt's position is closer to mine, but his conclusion may change after he reads this book.

[11] p. xii, FOR ALL MANKIND, Hurt, 1988, Atlantic Monthly Press

5 STAR LIGHT – STAR BRIGHT

On evenings when the sky is clear, as the day's light fades from our fluorescent sky some of us look up seeking the first star of the night. At such times, those of us still young at heart remember the old litany in which we ask the gods for one small, measly little favor. We remember squinching our eyes shut real hard and telepathically broadcasting our wish to the all-knowing gods. The ancient magical chant goes like this:

> *Star light — star bright First star I see tonight I wish I may, I wish I might Have the wish I wish tonight*

Most of us quit the practice as we got older. We quit because we noticed that very few of our wishes came true. For the few wishes that did come true, we usually soon came to regret making that particular wish in the first place; especially when it involved sex, jobs or money, all the really neat things in life. Indeed, sometimes a granted wish is so hard to get rid of that we desperately attempt to make it go away by again eliciting the same gods who granted it. To do this you have to try again, and again, and again.

By human standards, the fickle gods have a very distorted sense of humor, giving us what we ask for only when it is not what we truly deserve. Despite that fact, I have an idea why they do what they do. They sock it to us because most people wish on a star that is not a star at all. The two brightest objects in our sky are the planets Venus and Jupiter. Most people seeking to make a wish are too anxious. They usually mistake one or the other of these planets for the first "star" of the night. True, these planets are usually the first visible celestial objects, but from the viewpoint of the gods we are ignorant and greedy: ignorant for not knowing the difference and greedy for not waiting a few more minutes. Had we but waited we would have had our pick of the brightest stars: the important stars used by navigators.

Another ten minutes in the darkening night, provided we weren't legally blind, would have allowed us to see a hundred stars. Then, mere minutes later, a thousand stars would peep through in all their various shades of color and varying degrees of brightness. This, despite the fact that we live at the bottom of the atmospheric well which is laden with dust, humidity, smoke particles, and pollen. This, despite ground light pollution from house and streetlights, headlights, lighted signs, and smog, which destroy our night vision. Professional and amateur astronomers, along with a few hundred mil lio n other folks all over the world, know that the higher the elevation, the less the ground lighting; the less

the moonlight and the colder and drier the air, the more stars can be seen. In fact, tens of thousands of stars are visible to the naked eye, particularly at higher elevations on cold, dry nights.

Star watchers are entranced people who have been known to drag their kicking and screaming friends out into the dark night just to get them to stare up at the sky. I'm a dragger. I've urged many a friend out of warm sleeping bags when camped out on hunting and fishing trips. I have hauled them from warm cabins and cars on sub zero nights, after skiing all day and have even run them out of the warm cabin on my boat. Without exception, no matter how cold the night was, the raucous complaints stopped once they looked up.

The point is that in my entire life I have never met anyone who was star-blind. In fact, I had no idea that the condition even existed. Everybody I personally know (that's hundreds of people with the exception of those who are truly blind) can see the stars. Yet, after NASA pored through thousands of service records in 1961, and after multiple screenings and batteries of tests, NASA selected seven truly exceptional men for astronaut's training. Eventually one of them, Alan Shepard, was put in a tin can and blasted into a ballistic arc, barely touching what NASA called "space". "Close space" is a more accurate term.

Anyway, up he went. Despite the G's thrust on him from the cannon shell they called a Redstone rocket, Shepard reported seeing no stars. (If somebody strapped me in a tin can atop a Redstone rocket that pulled 4 G's acceleration, I think I would have seen stars!) Unbeknownst to us at the time, this was the first recorded case of star-blindness in the whole world. Alan, the poor guy, had all the "Right Stuff", but he was star-blind.

Next, NASA spent three and a half months setting up another lightweight tin can. This time Virgil Grissom duplicated the ballistic arc for the same fifteen minutes or so. When he was recovered and questioned, believe it or not, he hadn't seen any stars either. He too was star-blind. That's two out of two, and I figure the odds against that to be pushing about 10,000 to 1. To cover this obvious blemish in the superior abilities of the astronauts, NASA told us a little fabrication. Their apologists claimed that the eyes need a long time to adjust enough to see the stars in the blackness of space. That's one of the dumbest lies they ever told. We can stare at a street light and look quickly at a star and see it.

But at this stage of the game, someone in NASA must have been in a total panic. NASA's real goal, to beat the Russians to the dark side of the Moon, required men who could certainly see the stars. The only thing that NASA felt at this early stage in the space game was that this goal had been jeopardized. Astronauts with star-blindness who cannot see the stars would be unable to navigate to the dark side of the Moon. Being the first to get to the dark side was vital to American interest for both military and scientific reasons. Such reasons have somehow been almost synonymous since World War II. The military reason was that the first country to get there could build a base hidden from Earth. The scientific reason was that someday we could set up a telescope to study the stars.

Of course, a Lunar telescope could be almost as effective if it were located on the near side of the Moon. What we term a month is actually a Lunar day. Either side receives equal hours of day and night. The only advantage to be had was that the bright Earth would never block out a small section of the sky. The down side is that an alternate transmission method would be needed to communicate with Earth.

As soon as possible, NASA tinkered up another tin pot, this time bolting it on a bigger rocket. John Glenn soared into space and not only attained orbit, but also, a bit later, won a seat in the Senate. He was up for almost five hours and when snatched from the cold waters of the Atlantic Ocean he reported that he could actually see a few stars and even some constellations, indicating he was only a little bit star-blind. The odds against all three randomly chosen astronauts being star-blind to some degree had to be a million to one. This raised a scientific question: was star-blindness induced by space itself or by zero gravity?

NASA surely must have been dithered! However, being guys with the "Right Stuff, they next sent up a few more astronauts for even longer periods of time. But there was no improvement in the rate of star-blindness. Apparently, almost everybody had it. They also discovered that these poor souls were also planet-blind. On subsequent missions the various astronauts would report seeing God, flying angels, and UFOs, but the stars remained dim and fuzzy, and no one ever reported seeing a planet.

Once again, American prestige and world leadership was at stake. If the Soviets, who reported no such problem, found out that the creme de la creme of American men (those who had the most "Right Stuff) were star-blind, then by the power vested in the Domino Theory, our way of life would soon be over. We would be knocked onto the ground and stomped flat under the heel of a totalitarian military boot as demonstrated by Soviet Premier Khrushchev at the United Nations when he beat his shoe on a podium. Our democratic lifestyle would disappear from the face of the Earth: blasted away, city by city, in atomic holocausts. At least, that's what was strongly implied at the time about the Vietnam situation. And it also seemed to apply itself to this cold-war situation.

NASA tested another batch of pilots, but this time they tested them for star-blindness before they inducted them into the space program. Their research medical staff, together with an army of shrinks, devised a surefire test to check them out. The method was straightforward. It consisted in paying local scout leaders to escort the candidates into the mountains for a night of camping out and star gazing, man to man! When they came back from the trip the scout leaders pronounced them to really have "The Right Stuff."

The new group of astronauts were integrated with the old veterans, and NASA began to send them up two at a time in the Gemini Program. Hopes ran high. Still, after ten more space shots, the best that could be found were a few who could pick out a couple of fuzzy, indistinct stars. It was probably bruited about by the higher echelons of super spooks in the ASP cavern that star-blindness was extremely contagious — like chicken pox or measles.

The up side was that those few who could barely see the stars would become navigators and with luck we could still get to the dark side of the Moon before the Russians. It was dangerous, but hey, that's what men with "The Right Stuff do best; they confound us by confronting danger.

Further testing disclosed that for some undiscoverable reason every astronaut could see the stars and the planets while he was here on Earth, but the instant he hit space this was no longer true. The disease apparently occurred only under conditions of zero gravity. It seems a cosmic joke that just as man reaches for the stars he becomes star-blind. Obviously, no cure was ever found because even today few shuttle astronauts have ever mentioned seeing the stars or planets. Did I tell you that the gods were capriciously cruel and crazy?

The New World Order was hanging on by a thread. How could the rest of the world be led to one-world citizenship by the U.S. if our men didn't have the "The Right stuff"? The Trilateral Commission probably held its collective breath and ordered an expansion of NASA's program. NASA, being the eternal optimist, readily went along for two reasons. The first was that hope springs eternal in the human breast. Secondly, it was a gravy train, a pork barrel, a veritable cornucopia of untraceable and unaccountable funds.

NASA inducted even more astronauts into its ranks. They hired thousands of people and let out billion-dollar contracts to multi-zillion dollar blue chip, multi-national corporations. After all, what is money when God, Apple Pie, the Flag and the American Way of Life were at stake? Sooner or later, NASA knew that we would get to the dark side of the Moon. This was nobility in its highest form!

During the Apollo Program, they began to regularly send astronauts out in threes. The ground computers handled the outward bound navigation to the Moon. Everyone, including the designated navigators, hoped for the best. This turned out to be okay because once they orbited the dark side, while not cured, they really could see the stars clearly enough to be able to report their position.

Before my research into this matter I initially suspected that star-blindness was CIA disinformation for the Russians. Now I don't know what to think. But I shall reprint comments the astronauts themselves made during various Apollo missions so that you can come to your own conclusions. Only two of the many books I read for this book dealt in any depth with the subject of star-blindness beyond reporting that the stars were dim and fuzzy. The first is Carrying the Fire by astronaut Michael Collins. The other is For All Mankind by Harry Hurt III who seems to be a very competent researcher. I thought about going to visit the NASA archives in Houston, but I chickened out. I believe that once NASA lets a too-curious visitor into its vaults he (I), might not find the way out again.

The government, in addition to having a very bad safety record concerning people who seem to be a tad critical, are always classifying this or that file so that they cannot

be viewed for fifty some odd years. Many government critics have complained that the (so-called) Freedom of Information Act has many capricious frustrations. Besides, I didn't want to be "accidentally" locked in one of those basement record rooms.

My first quote for this section regarding the back side of the Moon was taken from Harry Hurt's book. He states: "The moon is a natural laboratory for practical research. Its dark side is the ideal place for a giant telescope (possibly constructed out of glass blown from lunar sands) that could afford vast new glimpses into deep space astronomy."[1]

That is exactly what I have been telling you. The dark side is apparently — according to NASA — the only place that star-blind people will ever be able to clearly see the stars. Never mind NASA's unconscionable goof with the original optics of the Hubbel Telescope — or their subsequent multi-million dollar repair job. Deep space telescopes may be astigmatic, but — by definition — they're hardly star blind, like the early astronauts. The serious side is that Hurt touts NASA's grandiose plans for Mars because he still believes in NASA.

It's all kind of dumb anyway. These fools talking about the dark side of the moon seem to have forgotten that the Moon has no Earth-type fluorescent atmosphere, which sends generated light flying in all directions. Light travels, or reflects, only in straight lines, and it makes absolutely no difference in space whether the Sun is shining or the Earth is shining. A highly directional instrument like a telescope would only have to have a black tube affixed to its end to protect its optics from secondary light pollution.

Buzz Aldrin was also quoted by Hurt. While riding Apollo 11 on its way to the Moon, he spoke about the spacecraft's induced rotation around its longitudinal axis. "the only consolation was the magnificence of the visual spectacle that paraded past their portals during every roll, what Aldrin calls "an incredible panorama every two minutes as the sun, moon, and Earth appeared in our windows one at a time."[2]

There was no mention of stars or planets. His partner, Neil Armstrong, is also quoted, ""The sky is black, you know,"..."It's a very dark sky.""[3]

I find all this extremely difficult to understand, because I have been in the woods at night when it was closet black. On clear nights, even those with the new moon, I could travel with ease through the woods using only the light provided by the stars. I was younger then and maybe my eyes were better, but I could even read a book or newspaper by the light of the moon.

What makes this star-blindness even stranger is that it comes and goes. On the Gemini 10 mission while space walking, Collins reported, "My God, the stars are everywhere:

[1] p. 319, FOR ALL MANKIND, Hurt, 1988, Atlantic Monthly Press
[2] p. 108, Ibid.
[3] p. 173, Ibid.

above me on all sides, even below me somewhat, down there next to that obscure horizon. The stars are bright and they are steady."[4]

Then, by the time he gets to the Agena, the stars are gone. Three years later, on his way to the moon in Apollo 11, he writes, "I can't see the earth, only the black starless sky behind the Agena, ..."[5] And on the next page, "As I slowly cartwheel away from the Agena, I see nothing but the black sky for several seconds,..."[6]

One hundred and fifty pages later he also writes, "What I see is disappointing for only the brightest stars are visible through the telescope, and it is difficult to recognize them when they are not accompanied by the dimmer stars,..."[7]

That's an incredible statement. Our normal stars seen clearly through a thick atmosphere here on Earth by the naked eye were so dim in space that even a telescope fails to reveal them. All I can conclude is that star-blindness must be like malaria: you are subject to unpredictable random attacks of star blindness when you are in zero gravity. It is a good thing that this doesn't happen here on Earth. Imagine the consternation if half the people say, "See that bright star up there!" and the other half asks, "Up where?"

Nevertheless, as the Apollo 11 capsule rounded the Moon the situation changed. As reported by Harry Hurt: "Apollo 11 commander Neil Armstrong, by far the most laconic member of the crew, was also moved to comment: "Houston, it's been a real change for us. Now we are able to see the stars again and recognize constellations for the first time on the trip. The sky is filled with stars, just like nights out on Earth."[8]

But as they rounded the Moon once again, the situation brings forth this comment from Mike Collins. "Outside my window I can see stars — and that is all. Where I know the moon to be, there is simply a black void; the moon's presence is defined solely by the absence of stars."[9] Naturally Collins couldn't see the stars if he were looking toward the dark side of the Moon, but if the Apollo 11 rotated, or came around the limb of the Moon, stars should be visible.

More confusion emerges as we read the following "explanatory" quote by Collins:[10]

> "Toward the sun nothing, nothing can be seen but its blinding disk, whereas down-sun there is simply a black void. The stars are there, but they cannot be seen because with sunlight flooding the space craft, the pupil of the eye involuntarily contracts, and the light from the stars is too dim to compete with

[4] p. 222, CARRYING THE FIRE, Collins, 1974, Ballentine Books
[5] p. 231, Ibid.
[6] p. 233, Ibid.
[7] p. 373, Ibid.
[8] p. 128, FOR ALL MANKIND, Hurt, 1988, Atlantic Monthly Press
[9] p. 409, CARRYING THE FIRE, Collins, 1974, Ballantine Books
[10] p. 383, Ibid.

> the reflected sunlight, as both enter the eye through the tiny aperture formed by the contracted pupil. No, to see the stars the pupil must be allowed to relax, to open wide enough to let the starlight form a visible image on the retina, and that can be done only by blocking out the sunlight." Then they rig plates over the windows and he reports, "Under these conditions the eye slowly "dark adapts" itself, and the brighter stars gradually emerge from the void."

Fourteen years later Collins wrote another book. The writing is so different from his first that one would almost think it was written by someone else (or at least another ghost writer). In it he proclaims, "My God, the stars are everywhere, even below me. They are somewhat brighter than on earth ..."[11] Toward the end of that book he declares, "Never a day without sunshine, or a night without stars — fat, unblinking stars."[12] Golly, Collins saw the light at last!

Every star is just a point of light. Even the closest stars cannot be magnified, or resolved, into a perceptible sphere by the largest of our astronomical telescopes. However, point for point, a visible star is an intensely bright shaft of light, much brighter even than the reflected sunlight from the Moon. As you may know, you can see the Moon in the daytime, when it's invisible to all who don't know the secret. All you have to know is exactly where to look, and simply sight it through a tube made out of your hands. I have been told that stars can be seen in the daytime by making a long black paper tube and then sighting through it. I have also read that stars are also visible from mine shafts and deep wells during the day.

Unfortunately, Apollo 11 was not the only mission during which star-blindness was a problem. Hurt reports this about the Apollo 14 mission, "The astronauts had a hard time seeing the stars even with the help of a special 'monocular' (half a binocular) used to supplement the scanning telescope and the sextant. Due to the absence of an atmosphere to refract and filter light, the stars do not twinkle in cislunar space. Rather, as Stu Roosa puts it, "The stars look like little points of light or fuzzy little dots."[13]

On that same mission Roosa's crew-mate Ed Mitchell got into the act. "It's a very eerie feeling. You suddenly start to recognize that, yeah, you're in deep space, that the planets are just that, planets, and that you're not really connected to anything any more, that you are floating through this deep black void."[14]

One of pilot Stu Roosa's jobs, as his partners descended and traipsed about on the Moon, was to take photos of the dark side of the Moon for mapping purposes while he orbited it. He reports, "That dim light photography was very complicated because you had to do it in total blackness, the blackest you can ever put a human being in without closing

[11] p. 100, LIFTOFF, Collins, 1988, Grove Press
[12] p. 266, Ibid.
[13] p. 116, FOR ALL MANKIND, Hurt, 1988, Atlantic Monthly Press
[14] p. 78, Ibid.

him in an absolute black room. You have no earth light, you have no sunlight, you have no reflected light bending the corners anywhere. It is black-black."[15]

What has me perplexed is that he is now talking about mapping photos he took of the dark side of the Moon. If it was that dark how did he get the pictures? His film is apparently fast enough to take pictures of a black body but not fast enough to see a star?

And Gene Cernan on the Apollo 17 also talked about his star-blindness. Hurt wrote, "When the sunlight comes through the blackness of space, it's black. I didn't say it's dark, I said black. So black you can't even conceive how black it is in your mind. The sunlight doesn't strike on anything, so all you see is black."[16]

No mention of stars, not even dim and fuzzy ones; no mention of planets either. I began to wonder why NASA subsequently put up the faulty Hubbel telescope if all these Apollo astronauts were really telling the truth. Could a telescope catch star-blindness? Then I thought of a superb super spook reason. Suppose the Hubbel was built so the CIA could look not up at the stars but down on Earth? They could then spy on the enemies of our state day and night. Enemies like you and me. Seems to me that the wide-angle lens included with the package is only useful when looking at the Earth. Recently I found out that Aldrin claims that as early as 1966 the CIA had a fleet of, at least, eight recon satellites equipped with telescopes called "Keyholes".[17]

Someday I wish that some Earthbound astronomer would take a quick peek at the repaired Hubbel during the day, when it's passing over his head. Like the monkey who was locked in a room by a psychologist watching through the keyhole to see what he'd do, I suspect that the Hubbel monkey might be found to be looking back at him.

To put the original disclaimer to the dim and fuzzy stars is Yuri Gagarin, the first Russian cosmonaut, who says of his flight, "Astonishingly bright cold stars could be seen through the windows."[18]

And then the last words are from Ghermin Titov, the Russian cosmonaut who had the first long stay in space (17 orbits). "Vostok II plunged with a rush into the inky blackness of the planet's shadow, and as my eyes quickly adapted to the change I stared in wonder at huge stars that glittered like diamonds."[19]

This leads inexorably to a final question: why lie? NASA always claimed that mankind had a universal urge to explore. Indeed the biggest reason for its existence was to advance science. The astronauts eventually came to consider themselves "scientists". Since science is the advancement of knowledge so that myth and false beliefs may be dispelled, why lie?

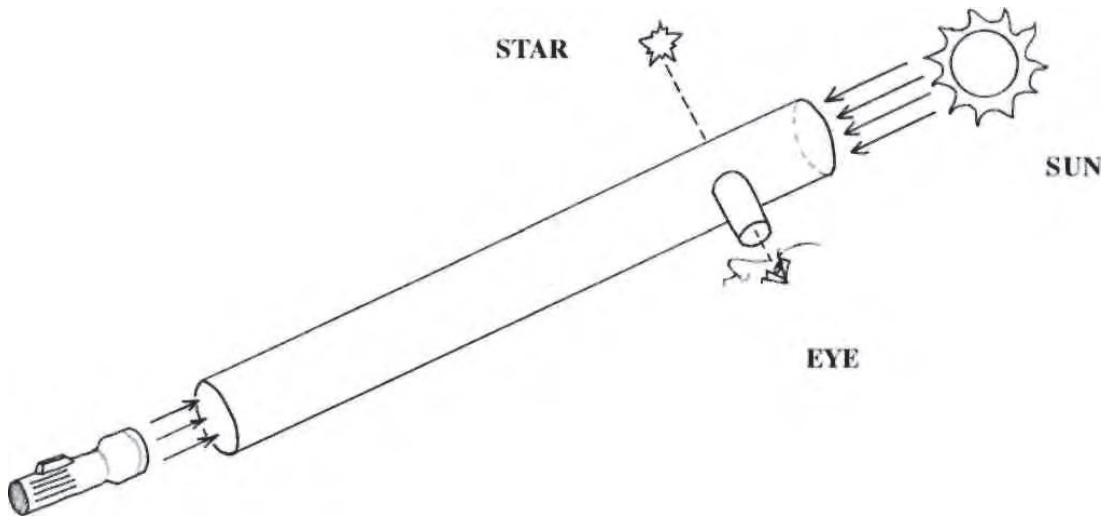
[15] p. 227, Ibid.
[16] p. 77, Ibid.
[17] p. 150, MEN FROM EARTH, Aldrin & McConnell, 1989, Bantam
[18] p. 4, SURVIVAL IN SPACE, Gagarin & Lebedev, 1969, Frederick A. Praeger
[19] p. 14, THE MOON: New World for Men, Caidin, 1963, Bobbs-Merill Co. Inc.

Professional astronomers have assured us that once we got above the Earth's atmosphere the view would be incredible. We would leave behind the moving thermal layers of air which causes those pin-points of light called stars to twinkle. We would also leave behind the reduction of intensity due to pollen, dust, humidity, and the thick layer of air itself. On a clear day we could see forever.

In retrospect, it seems that from the first Mercury shot, each and every astronaut has been compromised by the stars. These very same stars were reported as clearly visible by test pilots who flew the high-altitude rocket planes in the 1950's.

The final simple question. Why didn't the astronauts record on film a new scientific truth that the stars are not brilliant out in space? They had Hasselblad cameras, the finest in the world at the time. They had high-speed film, and, simply by opening the lens stop and slowing down the exposure they could have proved the truth of their words. Wouldn't that have been more scientific than randomly collecting a bunch of dusty rocks? But that would have given away the hoax. I repeat, it would have been impossible to fool the amateur astronomers.

5.1 STARLIGHT SCOPE ADDENDUM



I made this instrument to prove the astro-nots lied about the stars. The body is a two-foot long, three-inch diameter cardboard tube, through which I drilled a 1/4-inch hole exactly across the middle. The eyepiece is a two inch length cut from a toilet paper tube, and I glued it concentric to the drill hole. The tubes are painted flat black inside and out. During the day, with the Sun streaming down the tube, I can see a black object miles away.

At night, with a bright flashlight shining up the tube, I can see any star I look at. Photons at right angles to our line of sight simply do not interfere with our vision.

Even morons know that if they shield their faces from the Sun they can see objects very close to it. Don't you find it strange that not one of these men (with The Right Stuff) knew how to do this? Stranger still is the fact that when they complained about this to NASA not one of the NASA people knew how to do this!

6 MASS MURDER OR UTTER STUPIDITY

6.1 The Right stuff

"The Seven Samurai" is a 1954 Japanese cult movie about a poverty-stricken village that hired seven magnificent warriors to help them fight bandits. In 1960 Hollywood filmed "The Magnificent Seven", which was the same story set in Mexico as a western. Someone in the hierarchy of NASA had undoubtedly seen one or both movies and decided that seven space samurai was a psychologically appropriate number to start with. We were told that these men represented the nation's finest and that they possessed what was later called that elusive quality, "The Right Stuff."

Virgil Grissom certainly had "The Right Stuff". He was one of the original seven, culled from the first batch of military test pilots almost a decade before. Grissom was not the type of man who "went along to get along." Men who spend their lives seeking the wild hairs on a new airplane's ass seldom are. He was a professional test pilotand a mechanical engineer and had flown about 100 combat missions in Korea. But he was dead before his flight to the Moon could fulfill his dream.

6.2 Accidents

Compared to civilian test pilots, the astronauts were underpaid. However, their perks were impressive. Their celebrity status instantly conferred upon them all the bonuses usually associated with show business stardom. Each night on the town provided them with all the young women they could handle, plus free drinks in every bar in the country. They were also given a government jet trainer as a personal toy.

Test pilots have a hazardous occupation which probably sees as many fatalities per unit of time as do men in combat. However, before the first Apollo manned flight ever cleared the launching pad, eleven astronauts died in accidents. Grissom, Chaffee, and White were cremated in an Apollo capsule test on the launching pad during a completely and suspiciously unnecessary test. Seven died in six air crashes: Freemen, Basset, See, Rogers, Williams, Adams, and Lawrence. Givens was killed in a car crash.

When one reflects on their deaths in the light of the three-man instant crematorium one wonders. Add the fact that there were eight deaths in 1967 alone. One wonders if these "accidents" weren't NASA's way of correcting mistakes and saying that some of these men really didn't have "The Right Stuff."

After 1967, only Taylor died in another plane crash in 1970. An actuarial statistician would probably go berserk over these numbers considering how small the group was. Another weighty factor: even though they were "hot" pilots, the astronauts flew their trainer jets only part-time. And add to that the fact that trainers are inherently safer than other planes in the same class. It would raise his eyebrows to find how few of these men would ever enter space.

I can't help but wonder what technicians serviced their ships — because what we have here is an appalling "accident" rate. They were the finest professional pilots in the world, operating government planes where costs have little meaning. Yet they died. Even if we call the cremation an accident, we still have five more "accidental" deaths in one year. Very interesting! I also wonder what the death rate was among the other NASA employees who were in a position to know too much?

SPACE MISSIONS PERFORMED BY ORIGINAL SEVEN						
Name	**Mission**	**Date**	**Mission**	**Date**	**Mission**	**Date**
A. Shepard	Mercury 3	05/05/61			Apollo 14	01/31/71
V. Grissom	Mercury 4	07/21/61	Gemini 3	03/23/65		
J. Glenn	Mercury 6	02/20/62				
S. Carpenter	Mercury 7	05/24/62				
W. Schirra	Mercury 8	10/03/62	Gemini 6A	12/15/65	Apollo 7	10/11/68
G. Cooper	Mercury 9	05/15/63	Gemini 5	08/21/65		

6.3 The Preliminaries

The first American in space was Alan Shepard, followed by Grissom and then Glenn. I'm convinced that every Mercury flight was real and that the phony missions only started after Grissom's Gemini 3. Even some of the later Gemini flights were real (which leaves most of the original astronauts smelling like a rose). Unfortunately, Wally Schirra and NASA General Tom Stafford's Gemini 6A flight, with its miracle of an undamaged antenna, turned the rosy aroma into real toilet water. So did Alan Shepard's little golf game on the Moon during the Apollo 14 mission.

All of these men barely entered near space (near-Earth orbit) which I define as any altitude less than 500 miles. Far space is for those interstellar journeys that may come during the next millennium. That is, if we can solve our planetary problems before we

dissolve in the stew created by the Four Horsemen of the Apocalypse: War, Famine, Plague, Pestilence. Add a fifth "horseman", Religious Fanaticism, which frequently causes the other four.

Every other "race" involving aircraft, from hot air balloons through rocket planes, entailed serious efforts to go higher and faster than the other guy. For good technical reasons neither we or the Russians played that game. To this day our shuttle flights are limited to very near space, usually well under 200 miles in altitude.

Most writers on the Apollo Program either totally ignored, or played down, the fact that by early January '67, Grissom was no longer a happy camper. He was very disenchanted with both NASA and the prime capsule contractor, North American Aviation. This company had a phoenix-like ability to weather every storm, including the fire on Pad 34. They ultimately combined with Rockwell Engineering to become North American Rockwell.

6.4 Grissom's Lemon

North American Rockwell's first Apollo capsule was delivered and accepted by NASA in August '66, with a flight date set for November. But time after time the date had to be reset because of problems with the craft. "Grissom, a veteran of two test flights in Mercury and Gemini, normally quiet and easy-going, a flight pro, could not hide his irritation. 'Pretty slim' was the way he put his Apollo's chances of meeting its mission requirements."[1]

According to Mike Gray, "Grissom had a sense of unease about this flight. He told his wife, Betty, 'If there ever is a serious accident in the space program, it's likely to be me.'"[2] We will never know if this statement was the result of a psychic premonition or a burgeoning fear of our government.

Early in January '67, Grissom, probably unaware that NASA had other internal critics, hung a lemon on the Apollo capsule. Then he threatened to go public with his complaints about the LEM.[3] Grissom was already a popular celebrity, especially with the press. He would have had no problem getting his story out. In a case like this, even NASA's censors would have had little control over the news. Headlines like "Popular Astronaut Rips Into NASA!" couldn't easily be squelched.

[1] p. 117, FOOTPRINTS ON THE MOON, Barbour, 1969, The Associated Press
[2] p. 218, ANGLE OF ATTACK, Gray, 1992, Norton
[3] p. 117, FOOTPRINTS ON THE MOON, Barbour, 1969, The Associated Press

6.5 Space Radiation

NASA also had another serious problem besides being in a space race with the Russian Bear. This problem derived from our first answer to the Sputniks. On January 31, 1958, Explorer 1 lifted into orbit. It weighed a mere 18.3 pounds and carried a geiger counter which dutifully reported that a belt of intense radiation surrounded the Earth.

The belt subsequently was named after the Explorer project head, James A. Van Allen. The radiation was first predicted by Nikola Tesla around the beginning of the 20th century as the result of experimental and theoretical work he had done on electricity in space in general and the electrical charge of the Sun in particular. He then tried to tell our academic natural philosophers (scientists) that the Sun had a fantastic electrical charge and that it must generate a solar wind. His efforts came to naught! Those experts "knew" he was crazy. It would take almost sixty years for future experts to prove him right.

However, predicting something is not the same as discovery. The discovery of our magnetic girdle of radiation rightfully belongs to the man who was suspicious enough to put a geiger counter on board the satellite (whichever technician actually thought of it).

Subsequent study showed that these belts, begins in near space about 500 miles out and extend out to over 15,000 miles. Since the radiation is more or less steady, it obviously must receive as much radiation from space as it loses. If not it would either increase until it fried the Earth or decay away to nothing. Van Allen belt radiation is dependent upon the solar wind and is said to focus or concentrate that radiation. However, since it can only trap what has traveled to it in a straight line from the Sun, there remains a very dangerous question: how much more radiation can there be in the rest of solar space?

The Moon does not have a Van Allen belt. Neither does it have a protective atmosphere. It lies nakedly exposed to the full blast of the solar wind. Were there a large solar flare during any one of the Moon missions, massive amounts of radiation would scour both the capsules and the Moon's surface where our astronauts gamboled away the day. The radiation is worse than dangerous — it's lethal!

In 1963 the Soviet space scientists told the famous British astronomer Bernard Lovell that they "could see no immediate way of protecting cosmonauts from the lethal effects of solar radiation."[4] This had to mean that not even the much thicker metal walls used on the Russian capsules could stop this radiation. How could the very thin foil-like metal we used on our capsules stop the radiation? NASA knew better. Space monkeys died in less than 10 days, but NASA never revealed their cause of death.

Most people, even those interested in space, are still unaware that killer radiation pulses through space. I believe our ignorance was caused by the people who sell us space

[4] p. 173, JOURNEY TO TRANQUILITY, Young, Silcock & Dunn, 1969, Doubleday

sagas. I have a 9 by 12 inch coffee table book titled The Illustrated Encyclopedia of SPACE TECHNOLOGY printed in 1981. The words "space radiation" just do not exist on any of its almost 300 pages. In fact, with the exceptions of Mauldin's PROSPECTS FOR INTERSTELLAR TRAVEL published in 1992 and ASTRONAUTICAL ENGINEERING AND SCIENCE written by early NASA experts, no other book I have read even begins to discuss this extremely serious impediment to space flights. Do I detect the fine hand of my so-called government at work?

The Russians were in a position to know about killer radiation because as early as the spring of '61, their probes had been sent to the backside of the Moon. Upon his return to England, Lovell sent this information to NASA's Deputy Administrator, Hugh Dryden. Dryden, representing NASA, obviously ignored it!

Collins mentioned space radiation in only two places in his book. He said, "At least the moon was well past the earth's Van Allen belts, which promised a healthy dose of radiation to those who passed and a lethal dose to those who stayed."[5]

In speaking of ways to dodge problems he wrote, "In similar fashion, the Van Allen Radiation belts around the earth and the possibility of solar flares require understanding and planning to avoid exposing the crew to an excessive dose of radioactivity."[6]

So what does "understanding and planning" mean? Does it mean that after the Van Allen belts are passed, the rest of space is free of radiation? Or did NASA have a secret strategy for dodging solar flares once they were committed to the trip?

It seems to imply that in 1969 it was possible to predict solar flares. My astronomy text has this to say on that subject: "It is accordingly possible to predict only approximately the date of the future maximum and how plentiful the groups will then become."[7] This text was 10 years old by 1969. Later in this book I will show that nothing had changed during the years of Apollo Moon missions.

To continue with the Apollo Program after receiving this information implies that NASA knew something the Soviets didn't. Either we had developed an effective extremely lightweight radiation shield or NASA already knew that no one was going anywhere near the Moon.

Could the cloth in our space suits stop radiation? I doubt it because more than 15 years have passed since the partial core meltdown at Three Mile Island. Workers still can't enter the containment dome. We don't yet have the technology to create lightweight flexible radiation shielding. High velocity could get the capsule through the Van Allen belt quickly, but what could they do about solar flares during the rest of the trip to the Moon? If we didn't go to the Moon, why didn't the Soviets, our arch enemies, rat us out?

[5] p. 62, CARRYING THE FIRE, Collins, 1974, Ballentine Books
[6] p. 101, Ibid.
[7] p. 291, ASTRONOMY, Baker, 1959, Van Nostrand

Something rang a bell as I thought about this. About the time we were fighting communism in Vietnam, and other countries in southeast Asia, we began selling wheat by the megaton at an ultra-cheap price to the Soviet Union (later to be called the Evil Empire) wheat by the megaton at an ultra-cheap price. On July 8, 1972 our government shocked the entire world by announcing that we would sell about one quarter of our entire crop of wheat to the Soviets at a fixed price of $ 1.63 per bushel. According to these sources we were about to produce another bumper crop while their crop would be 10 to 20 percent less. The market price at the time of the announcement was $ 1.50 but immediately soared to a new high of $2.44 a bushel.[8]

Guess who paid the 91 cents difference in price for the Soviets? Our bread prices and meat prices were immediately inflated, reflecting the suddenly diminished supply. It was the beginning of the high inflation of the ’70s. Now, how much did the Moon cost us? Would our government be a party to blackmail? Nah!

However, if NASA knew that Kennedy’s dream was impossible in the timeframe given, they should have reported this to the President. We are "civilized" now and no longer cut off the right arm of the messenger who brings bad news. Now we cut off budgets! That’s safer for the messenger but fatal to the bureaucracy in question.

NASA must have decided that if they couldn’t make it they would fake it. Big bucks were at stake here, to say nothing of American prestige. Those bucks, properly funneled, would buy a lot of Southeast Asia, at least for awhile. And with proper prestidigitation, some of same could wind up in numbered accounts handled either by the "gnomes of Zurich" or offshore Caribbean banks.

6.6 NASA’s Other Problem

NASA’s second problem was magnified as a result of the first. If they were really going to land on the Moon they would have to be able to take great quantities of real photos and pick up genuine Moon rocks. Such pictures should include the Earth rising or setting against a background of a bona fide starry sky.

However, if they weren’t actually going to the Moon, the evidence would have to be synthesized. Credible proof was vital to the continued high rate of funding and to NASA’s very survival. NASA’s labs could create "Moon rocks" to the specifications of an educated, or rather an expected, guess that would pass any inspection, because there wasn’t anything else to compare them to.

Or they could have used rock samples picked up in Antarctica during the intensive exploration of that continent during the International Geophysical Year in 1957, when

[8] p. 1168, Economics of a Wheat Deal, Oct. 27, 1972, NATIONAL REVIEW

that continent was extensively explored. Werner Von Braun had Antarctic rocks shipped to NASA. Any strange rock would do if there were no fossils in it. These rocks could be slowly doled out, but only to those geologists who could be counted on to agree with anything the government said. Much of academia can be relied on to do just that!

Strangely enough, rocks were later found in Antarctica that closely resemble "Moon rocks". In point of fact, some geologists are now positive that these rocks were blasted from the Moon to Earth during immense meteoric impacts.

However, true-to-the-Moon photos posed a bit more of a problem. Because the 20th century is the age of increasingly sophisticated photography, huge amounts of tape and film had to be expended. At the time NASA seemed to do precisely that. As Harry Hurt wrote, "... Project Apollo was one of the most extensively documented undertakings in human history ..."[9]

Despite this claim and the fact that NASA's Apollo mission photo numbers seem to indicate that thousands of pictures were taken, we keep seeing the same few dozen pictures in all the books on space.

Using the well-developed art of Hollywood-style special effects (FX), the astronauts could be photographed "on the Moon" in the top secret studio set up near Mercury, Nevada. Of course, there is a bit more to great FX than having the best equipment. As in any art form, the artists are always more important than their tools. The backbone of superb FX is lodged in the Hollywood professionals who devote their lives to it. Lacking access to these experts, NASA was forced to use CIA hacks — relative amateurs.

Nevertheless, they did their job well enough to pass casual inspection for many years. It worked only because we wanted to believe! As long as we had something to hang our hats on we could continue to have faith and ignore the anomalies in the evidence the photos provided. It worked — for a while!

6.7 Grissom's Final Mistake

At the time of his death Grissom was one of NASA's old-timers. He was the man who, a few short years before, certified that the astronauts had been involved in every step of the program and had been free to criticize at will and even suggest ideas for improvements. He was the man whose fatal error was no more than in being who he was: an independent thinker; a free spirit who seemed to be completely unaware that NASA had wholeheartedly opted to enact the second part of the old saying "If you can't make it, fake it!"

[9] p. 323, FOR ALL MANKIND, Hurt, 1988, Atlantic Monthly Press

He had been selected as Commander of Apollo 1, the first manned flight of the Apollo series. Grissom's crew included Edward H. White and Roger B. Chaffee. White flew on Gemini 4 but Chaffee was a newcomer who had not as yet been in space or fulfilled the NASA rite of passage by denying the visibility of stars and planets.

6.8 The Handicap

Right from the beginning, NASA was operating under a tremendous handicap. They were in a space race with a nation who, they knew, had operational rockets that made ours seem like tinker toys by comparison. The Soviets started their space program in capsules that were 50 times heavier than those we were launching six months later.

Soviet capsules were closer to being compressed air tanks than flimsy space capsules. Their ships had sufficient wall strength to maintain normal atmospheric pressure inside the craft against the zero pressure outside in space. However, since we didn't have rockets to lift that sort of weight, we couldn't afford this luxury. We had to make light, tin foil capsules just to get into the ball game.

The differential in pressure between the 14.7 psi (our normal atmospheric pressure) and the zero pressure of space amounts to 2116 pounds per square foot of outward loading on the enclosing wall of a capsule. Compare this figure with the floor of a house — which is designed to be safely loaded to only 30 pounds per square foot — and you will realize that relatively heavy metal is vital for skin and skeleton if you want to enjoy normal pressure. It is wall strength that prevents catastrophic and explosive depressurization of small capsules. The LEM's walls will be discussed in more detail later.

6.9 Breathing Mixtures

The greater lifting capacity of their rockets allowed the Soviets the luxury of using a mixture of 20 percent oxygen and 80 percent nitrogen — the equivalent to regular air. Naturally, it wasn't stored on board as bulky "compressed air". It was stored separately as liquids in cryogenic tanks. However, the nitrogen supply was smaller, since the gas is inert to the human body, and additional nitrogen is required only to help re-establish pressure when the cabin is vented to space. Oxygen tanks were larger because the only oxygen used was that small portion converted into CO2 by the necessity of breathing. This is immediately removed from the cabin by chemicals. A great deal is also lost when the cabin is vented to space during depressurization.

6.10 Pure Oxygen

Lacking strong-walled capsules, NASA decided right from the beginning to use 50 percent oxygen and 50 percent nitrogen at 7 psi. This specification was changed in August 1962 into the use of pure oxygen at 5 psi.[10]

A policy shift of this nature indicates that approved design of the capsules that were manufactured was weaker than expected. The amazing thing is that NASA made this deadly decision despite testing that usually ended in disaster. One would think that after testing showed disaster one would never implement a dangerous policy. But NASA was in a race with destiny. They had no time for common sense.

6.11 NASA Tests

Here is a list of all government-sponsored testing that resulted in oxygen fires. This information was extracted from Appendix G in MISSION TO THE MOON written by Kennan & Harvey.

> "September 9, 1962 — The first known fire occurred in the Space Cabin Simulator at Brooks Air Force Base in a chamber using 100 % oxygen at 5 psi. It was explosive and involved the CO2 scrubber. Both occupants collapsed from smoke inhalation before being rescued."
>
> "November 17, 1962 — Another incident using 100 % oxygen at 5 psi in a chamber at the Navy Laboratory (ACEL). There were four occupants in the chamber, but the simple replacing of a burned-out light bulb caused their clothes to catch on fire. They escaped in 40 seconds but all suffered burns. Two were seriously injured. In addition an asbestos "safety" blanket caught fire and burned causing one man's hand to catch fire."
>
> "July 1, 1964 — This explosion was at an AIResearch facility when they were testing an Apollo cabin air temperature sensor. No one was injured. The composition of the atmosphere and pressure isn't listed, but we have to assume 100 % oxygen (and possible pressure equal to atmospheric)."
>
> "February 16, 1965 — This fire killed two occupants at the Navy's Experimental Diving Unit in Washington, DC. The oxygen was at 28 % and the pressure at 55.6 psi. The material in the chamber apparently supported extremely rapid combustion, driving the pressure up to 130 psi."
>
> "April 13, 1965 — Another explosion as AIResearch was testing more Apollo equipment. Again, neither pressure or atmospheric composition is given but a polyurethane foam cushion exploded."

[10] p. 193, JOURNEY TO TRANQUILITY, Young, Silcock & Dunn, 1969, Doubleday

> "April 28, 1966 — More Apollo equipment was destroyed as it was being tested under 100 % oxygen and 5 psi at the Apollo Environmental Control System in Torrance, CA."
>
> "January 1, 1967 — The last known test was over three weeks before Grissom, Chaffee & White suffered immolation. Two men were handling 16 rabbits in a chamber of 100 % oxygen at 7.2 psi at Brooks Air Force Base and all living things died in the inferno. The cause may have been as simple as a static discharge from the rabbits fur . . . but we'll never know."

Of course, NASA's moronic decision to use pure oxygen would play a crucial part in the deadly fire on Pad 34 a few years later. Never mind that the test was classified as "non-hazardous" by NASA. Only after Grissom, White, and Chaffee died in that fire would NASA again change the specs to either 60-40 or 50-50 oxygen/nitrogen mixes at 5 psi, depending on the sources. "

In pure oxygen at normal pressure even a piece of steel wool will burn rapidly. In fact, Michael Collins claims that even stainless steel will burn.[11] As mentioned already, an asbestos blanket, normally classed as fireproof, was consumed when used to smother flames during an oxygen fire.[12] Pure oxygen is extremely hazardous!

To successfully switch to reduced-pressure breathing of pure oxygen one must first purge the body of nitrogen. This prevents residual nitrogen left in the body from forming small bubbles which expand from the decreasing pressure. To deep sea divers this is known as the "Bends". To avoid this lethal hazard, astronauts must spend some period of time breathing 100 percent oxygen, at full atmospheric pressure, just before the mission. This is medically dangerous.

The pressure problem in a space capsule is similar, but opposite, to those encountered in a submarine. Submarine hulls are deliberately built strong to resist the increasing pressure at depth. If a submarine hull were as thin as our spacecrafts at 200-feet deep water it would require an internal pressure of 100 psi — at 300 feet a pressure is 150-psi.

6.12 Pressure Testing

The Apollo Program command capsules must be regarded as flimsy, even though they were built of titanium, which has the strength of steel and weighs half as much. I reason that if our capsules were too weak to withstand normal pressure, they must also have been too weak to keep the atmosphere from crushing the capsule on the launching pad. If this was true they had to be using 100 percent oxygen at normal pressure during the launch.

[11] p. 275, CARRYING THE FIRE, Collins, 1974, Ballentine Books
[12] p. 194, JOURNEY TO TRANQUILITY, Young, Silcock & Dunn, 1969, Doubleday

I found out that this is precisely what NASA did on all their launches. It is obvious that the present shuttles, with 50 tons of cargo capacity, could use normal pressure and regular air. However, the designers may still begrudge the few pounds of extra material in the cabin that it takes to do this. By the same token, our large diameter commercial airliners are able to maintain almost regular atmospheric pressure and don't have to resort to pure oxygen, even when flying over 40,000 feet? Neither does the SST which reaches altitudes of 60,000 feet.

To insure the integrity of the capsule, NASA subjected it to their pressure test. One would assume that they would use compressed air for this test, because the electric panels had power, and live men were inside the unit. However, when it came time to test the capsule on Pad 34, it was decided to use pure oxygen at a pressure somewhat above our atmospheric pressure of 14.7-psi. What the actual pressure was is confusing. It was either 16.7 psi according to Michael Collins, or 20.2 psi as reported by Frank Borman.[13]

One would think that intelligent men with "The Right Stuff would know precisely the pressures used. But either way, there were astronauts locked inside — practicing for their first Apollo mission. After the accident NASA claimed the test was SOP (Standard Operating Procedure). In either case an idiot was in charge.

If it was SOP, then the idiot was the official who instituted and approved this test program. If not, then it was the low-level idiot in direct charge of the test who gave the order to proceed. I have no fear of a libel suit because of this accusation. The only legal defense in a libel suit is whether what you said was the truth as determined by a jury. If you were on a jury and watched steel wool explode in a 16.7 psi 100 percent oxygen atmosphere what would you decide?

I find it hard to believe that this test was SOP. In fact, I suspect that it wasn't, simply because two men with "The Right Stuff couldn't agree. NASA telling us after the fire that it was always done that way doesn't prove a thing. NASA, like all political organizations, can always be counted on say anything to better their position. Using pure oxygen at this pressure, once the panels were alive, means that every launch was always one small spark away from disaster. Combustion in 100 percent oxygen even at low pressures is extremely rapid. At higher pressures it becomes explosive!

6.13 High Pressure Oxygen

Consider this standard procedure: burning a substance using high pressure oxygen is precisely the method used to determine the number of calories in that substance. The test

[13] p. 175, COUNTDOWN, Borman & Serling, 1988, Morrow

procedure requires placing the sample in a strong steel pressure vessel called a "Calorimeter Bomb." The "Bomb" is placed in an insulated container holding a known quantity of water at a known temperature. There is an electrical sparking device inside the bomb, and sufficient high pressure oxygen is added to insure complete combustion of the material.

Even relatively wet foodstuffs are quickly reduced to ashes once the electric spark initiates combustion. This process produces high pressures in the steel chamber. That's why it's called a Calorimeter Bomb. The heat is transfered to the surrounding water and the rise in temperature, according to known parameters, results in the quantity of calories (energy) derived from the substance tested.

Every time an electric switch is thrown, the induction of the electric current causes a tiny spark to jump between the two switch contacts. If the unit is explosion proof (like the switches, motors, and lighting fixtures used in hazardous or explosive locations), that spark is safely enclosed in a hermetically sealed container. If not, anything near it that is combustible can burn.

In standard electrical switches the electrical insulation is some form of plastic (hydrocarbon). All hydrocarbons can be oxidized if there is sufficient oxygen and heat to raise the temperature of some small portion of that substance beyond the flashpoint. Bear in mind that an electric spark is a plasma. Indeed, the temperature at the core of a large spark can be so high it is indeterminable.

6.14 Spontaneous Combustion

The phenomenon we call spontaneous combustion is also oxidation. Under normal conditions oxygen in the air begins to oxidize almost any material. In fact, what we call rust on metal is very slow oxidation. If the material is insulated to any degree, the heat created by the process cannot escape as fast as it is generated. The entrapped heat creates a small temperature rise which increases the rate of oxidation. If some or all of that increased heat cannot escape there is a self-escalating "loop". The temperature continues to rise until the flashpoint is reached. At that point the material bursts into flame. That's "spontaneous" combustion.

In an atmosphere containing a higher percentage of oxygen, or a higher pressure, the oxidation rate is greatly increased. It is well known that a pile of oily rags in an oxygen environment will burst into flame. In 100 percent oxygen any hydrocarbon or carbohydrate becomes potential fuel needing only a small spark or increase in heat to set it off.

6.15 The Test

On January 27, 1967 astronauts Grissom, White and Chaffee approached Pad 34 where an obsolete model of the command capsule had been installed on top of an unfueled Saturn IB rocket.[14] This was the same type of rocket that had carried the smaller and lighter Gemini capsules. The capsule itself was already outmoded and would be replaced before any Apollo missions were launched.

However, this was a full "dress rehearsal". But somebody neglected to tell the maintenance people to clean out all the extremely combustible extraneous construction materials. The urgency of this test was simply that they were scheduled for a manned mission that had been repeatedly postponed. As we will see later, NASA had every intention of sending Apollo 1, Grissom's mission, into space even though neither the Saturn V (actual moon rocket) nor the Apollo capsule had ever actually been tested in space.

Wouldn't you have smelled a rat? Perhaps Grissom was a bit worried. He got Wally Schirra to ask Joe Shea, NASA's chief administrator, to go through the test with him. "Grissom still wanted Shea to be with him in the spacecraft."[15] Shea refused because NASA couldn't patch in a fourth headset in time for the test. Is that likely? It is difficult to believe that this couldn't have been done in the 24-hour timeframe available. If I had a crew of technicians who couldn't install another headset jack in that amount of time I 'd fire the whole damn crew.

The original Apollo capsule had different hatches, but by 1300 hours all three astronauts were strapped in their acceleration couches with the new hatches sealed behind them. It was later revealed that these hatches were so poorly designed that even with outside help and in a non-emergency situation, it took seven or eight minutes to open them. They were originally supposed to spend a few hours practicing throwing the proper switches at the right time in sequential response to computer simulations. However, with delay piled upon delay and everyone in a hurry, each time a switch was thrown, unnoticed, tiny sparks jumped.

During the test of the Apollo capsule on Pad 34, Grissom and his crew were in 100 percent oxygen simulating the real thing. In fact they reported a burning smell a few times earlier that day. When that happened technicians would come with "sniffers", open the hatches, but find nothing. One wonders if the review board considered that these hatch openings flushed out the smell with the fresh air admitted by opening the hatch. These incidents delayed the test, and time was running out.[16] The extraneous combustible materials may have been combining with the pressurized oxygen each time pure oxygen refilled the cabin. Oxidation makes heat, and if you stop the process that heat remains in

[14] p. 101,WE REACH THE MOON, Wilford, 1969, Bantam
[15] p. 187, APOLLO The Race to the Moon, Murray & Cox, 1989, Simon & Schuster
[16] p. 186, JOURNEY TO TRANQUILITY, Young, Silcock & Dunn, 1969, Doubleday

the material. Each time you repressurize the craft the combustible material will be at a slightly higher temperature. I sense that Borman's "board of review" missed this angle.

I also feel that spontaneous combustion would have been much too subtle for the CIA. If it was a CIA hit they would have done it with an electric squib or incendiary device wired to a switch, programmed to be thrown toward the end of the test.

While the testing was going on, some mastermind in Mission Control decided to save some time. In his wisdom that unknown leader made the decision to speed up the testing. As the board of inquiry later noted, "To save time, the space agency took a short cut." What he did was simply order the capsule to be pressurized with 100 percent oxygen at either 16.7 or 20.2 psi. Notice that no name was used. The entire agency takes the blame. Such compassion by a major player!

I have great difficulty believing that apparently not one of these rocket scientists in Control, nor the astronauts themselves, knew that a Calorimeter Bomb consists of a combustible material, pressurized oxygen, and a spark. These were highly educated men who had technical degrees, who had taken chemistry courses, and who must have spent some time around welding and cutting torches that used oxygen.

I cannot understand why Grissom et al entered that capsule in the first place if they knew it was to be pressurized with oxygen over 14.7 psi. In a hospital no one is allowed to smoke in a room where oxygen is in use. In this situation we have only a small section of a room with tiny amounts of low-pressure oxygen being used. Yet everyone seems to know of the danger. Grissom was a test pilot and engineer, while both White and Chaffee had degrees in aeronautical engineering. Apparently not one of them complained. Didn't anyone know about Calorimeter Bombs? Didn't NASA send them copies of the fire reports? Or maybe no one told them they were jacking up the pressure!

At 1745 hours (5:45 pm) Grissom was getting angry with the communication people for a static-filled, on-again-off-again communication system. At one point he ragged them, "How do you expect to get us to the moon if you people can't even hook us up with a ground station? Get with it out there."[17]

In the meantime, around 6: 00 p.m., Collins had to attend a general meeting of the astronauts. Let Collins tell you about it in an incredible single paragraph.[18]

> "On Friday, January 27, 1967, the astronaut office was very quiet and practically deserted, in fact. Al Shepard, who ran the place, was off somewhere, and so were all the old heads. But someone had to go to the Friday staff meeting, Al's secretary pointed out, and I was the senior astronaut present, so off I headed to Slayton's office, note pad in hand, to jot down another weeks worth

[17] p. 96, WE REACH THE MOON, Wilford, 1969, Bantam
[18] p. 270, CARRYING THE FIRE, Collins, 1974, Ballentine Books

> of trivia. Deke wasn't there either, and in his absence, Don Gregory, his assistant presided. We had just barely gotten started when the red crash phone on Deke's desk rang. Don snatched it up and listened impassively. The rest of us said nothing. Red phones were a part of my life, and when they rang it was usually a communications test or a warning of an aircraft accident or a plane aloft in trouble. After what seemed like a very long time, Don finally hung up and said very quietly, "Fire in the spacecraft." That's all he had to say. There was no doubt about which spacecraft (012) or who was in it (Grissom-White-Chaffee) or where (Pad 34 Cape Kennedy) or why (a final systems test) or what (death, the quicker the better). All I could think of was My God, such an obvious thing and yet we hadn't considered it. We worried about engines that wouldn't start or wouldn't stop; we worried about leaks; we even worried about how a flame front might propagate in weightlessness and how cabin pressure might be reduced to stop a fire in space. But right here on the ground, when we should have been most alert, we put three guys inside an untried spacecraft, strapped them into couches, locked two cumbersome hatches behind them, and left them no way of escaping a fire. Oh yes, if a booster caught fire, down below, there were elaborate if impractical, plans for escaping the holocaust by sliding down a wire, but fire inside a spacecraft itself simply couldn't happen. Yet it had happened, and why not? After all, the 100 percent oxygen environment we used in space was at least at a reduced pressure of five pounds per square inch, but on the launch pad the pressure was slightly above atmospheric, or nearly 16 psi. Light a cigarette in pure oxygen at 16 psi and you will get the surprise of your life as you watch it turn to ash in about two seconds, with all those oxygen molecules packed in there at that pressure, any material generally considered "combustible" would instead be almost explosive."

Here Collins reported that the pressure was 16 psi. Other authors went higher. A staff meeting at 6:00 p.m. on Friday night? Do you have a feeling that this Friday night staff meeting was the first and last in the long history of our government bureaucracies?

6.16 The Fire

At 6:31:03 pm, one of the astronauts smelled smoke and yelled fire. The capsule had suddenly turned into a Calorimeter Bomb. They tried their best to open the hatch. Without panic the triple hatch which sealed them in usually took about nine minutes to open. They didn't have nine minutes. In fact, they barely had ninety seconds before their suits burned through and the deadly poisonous gasses released from the burning of modern plastics silenced them forever.

The capsule's internal pressure soared from the great quantity of hot gasses created by the quasi-explosive burning of all the combustible material. This short-term fire was so

intense that it melted a silver soldered joint on the oxygen feed pipe, pouring even more oxygen into the conflagration.

At 6:31:17 p.m., 14 seconds from the first smell of smoke, the pressure reached 29 psi, and the capsule ruptured, effectively releasing the heat and damping the fire. But it was too late. They were already as good as dead.

If this was not murder and was just an example of extreme stupidity in governmental slow motion, why did government agents in rapid action raid Grissom's home before anyone knew about the fire? Why did they remove all his personal papers and his diary? Why didn't they return his diary, or any other paper with the word "Apollo" on it, when they returned some of his personal papers to his widow? And if it really took 29 psi to blow the cabin, why didn't they use regular air at higher pressure?

Also, was it really the vicissitudes of life that the outward opening hatch was coincidentally changed that very morning to one that opened inward? An inward-opening hatch meant that any inside pressure, acting outward, would prevent it from being opened — even if someone was standing by, which they weren't. It was also bolted up from the outside and lacked explosive bolts.[19]

6.17 The Aftermath

NASA should have known better. And they did! You read earlier of the men injured in flash explosive fires in their own tests. NASA had even commissioned a report by Dr. Emanuel M. Roth which was published in 1964. Dr. Roth cited difficulties with 100 percent oxygen atmospheres even under low pressures. Any competent engineer should have known the dangers of oxygen at 16.7 or 20.2 psi. This is why I cannot believe that this was "standard operating procedure"or that Grissom and his crew knew about it. NASA not only ignored their own tests on pure low-pressure oxygen but upped the ante by increasing the pressure above atmospheric!

Kennan and Harvey had this to say, "Most U.S. scientists could not believe their ears when they learned that fact. Oxygen at such pressure comes in the category of an 'oxygen bomb:"[20]

6.18 The 204 Board of Inquiry

A board of inquiry termed "The Apollo 204 Review Board" was quickly convened to investigate the fatal fire, and astronaut Frank Borman was appointed chairman. In effect,

[19] p. 32, MISSION TO THE MOON, Kennan & Harvey, 1969, Morrow
[20] p. xi, Ibid.

NASA sent the fox into the chicken house to investigate mysterious disappearances of the occupants. The board's final report was about what you might expect when an in-house investigation investigates itself. "One key to the caution which reveals itself on every page of the Board's report is that it was written by government employees. Thompson himself was director of the space agency's Langley Research center, and no fewer than six of the eight Board members were NASA officials."[21]

The pressure of 16.7 psi is quoted from Journey to Tranquility in which the authors wrote that they learned the pressure of the pure oxygen in the capsule was 2 psi over atmospheric. Collins reported it as nearly. 16 psi. It seems strange that NASA told two insiders, Borman and Collins, plus the authors of "Tranquility" three different capsule pressures. Apparently NASA, like the rest of us, finds it almost impossible to keep all the little white lies straight. And if it's a group lie we get the results shown in this book.

Borman writes that "We brought in every learned mind we could enlist — including a chemistry expert from Cornell,..."[22] Didn't this expert know that oxygen has a deep and forceful desire to breed little oxides by passionately mating with hydrocarbons and carbohydrates? Didn't this so-called expert tell them that?

Borman played dumb when he was called before Congress. In testifying under oath he said, "None of us were fully aware of the hazard that existed when you combine a pure oxygen atmosphere with the extensive distribution of combustible materials and a likely source of ignition ... and so this test ... was not classified as hazardous."[23] And if Borman was as unaware of all the dangerous fires that erupted during NASA's own safety tests over the years, why did he later write about 20.2 psi oxygen in this manner: "That is an extremely dangerous environment, the equivalent of sitting on a live bomb, waiting for someone to light the fuse."[24]

Aldrin in his 1989 book, "MEN FROM EARTH", written 22 years after the cremation has this to say "As every high school chemistry student learns, when a smoldering match is put into a beaker of oxygen, it blazes into a spectacular flame."[25]

Aldrin continues telling us how there was a multitude of switches and miles of electrical wiring, all of which were easy to short and could act as a match. "But the risk was considered acceptable because, in space, the astronauts could instantly depressurize their cabin . . ."[26] Hey, Buzz, didn't you claim that the reason your EVA on the Moon was late in starting was because it took so long to vent the last of the oxygen from the LEM?

[21] p. 192, JOURNEY TO TRANQUILITY, Young, Silcock & Dunn, 1969, Doubleday
[22] p. 174, COUNTDOWN, Borman & Serling, 1988, Morrow
[23] p. 146, MISSION TO THE MOON, Kennan & Harvey, 1969, Morrow
[24] p. 175, COUNTDOWN, Borman & Serling, 1988, Morrow
[25] p. 162, MEN FROM EARTH, Aldrin & McConnell , 1989, Bantam
[26] p. 163, Ibid.

What? Borman, who held a Masters in engineering and taught thermodynamics at West Point, claims nobody was aware of the danger! After all these years Aldrin now claims he knew. Obviously, either Borman is lying or Aldrin didn't have the guts to open his mouth.

When Deke Slayton was asked about the pressure test he reportedly blurted out, "Man, we've just been lucky. We've used the same test on everything we've done with the Mercury and the Gemini up to this point, and we've just been lucky as hell."[27]

Why do I doubt that? I suspect that everything about the pressurization test is a lie. I think that it was a one time only occurrence specially configured to suit the job at hand.

Borman contended that Ed White and his wife Pat were friends of his and that he listened to the audio tapes of the fire over and over again. Then he states, "The only comfort derived from listening to the tapes was the knowledge that the agony hadn't lasted long; that death had come from noxious fumes before the flames reached them."[28]

Borman's acumen might be judged by the fact that Eastern Airlines turned into a sinking submarine when he was at the helm as CEO. Nobody dies in 14 seconds from noxious fumes. Ed White died inhaling super heated oxygen which set fire to his lungs, throat and skin the same way that technician's hand burned in the test years before. The chances are they survived for minutes and were conscious for a good part of that time. However, death was definite after the first breath.

Borman then writes about "nuts" and disgruntled employees who tried to give his committee information. "As the investigation progressed, all sorts of nuts came out of the woodwork with their own theories. There also were some serious allegations directed against North American Aviation, most of them coming from former employees with large axes to grind. They charged the company with criminal neglect and mismanagement, and we investigated each accusation thoroughly. We found that in every case we were getting input from people who simply had personal grievances against the company, with no evidence to back them up."[29]

That's odd! One of Borman's superiors, General Sam Phillips, also made a report in November 1966 that shredded North American Aviation. He could hardly be classified as a disgruntled employee. Speaking of classified information, Michael Gray in his book disclosed the fact that Phillip's report was classified.[30] Borman apparently ignored that report.

Time and time again, NASA has bragged about how open NASA was. One wonders, then, who classified this report? What could it possibly have had to do with national

[27] p. 233, ANGLE OF ATTACK, Gray, 1992, Norton
[28] p. 174, COUNTDOWN, Borman & Serling, 1988, Morrow
[29] p. 178, Ibid.
[30] p. 240, ANGLE OF ATTACK, Gray, 1992, Norton

security? No wonder that Bill Kaysing was never able to obtain a copy. To paraphrase an old saying, the "TOP SECRET" stamp, because it reflects patriotism, has always been the last refuge of scoundrels.

On April 27, 1967 the 204 Board was still in the process of (almost) learning new things. A low-level employee named Thomas Baron had already testified in Washington and now was a target for NASA's ire. His voluminous reports were day by day accounts of North American's screw-ups and were written years earlier. It seems very strange that both Baron's and Phillips' reports disappeared. After accepting his reports, the 204 Board wrote off his testimony. By the very next evening Baron, his wife, and his stepdaughter would be dead! The two women were totally innocent, but apparently that's what they get for associating with a NASA whistle-blower.

One of the common "accidents" to governmentally-sensitive folks in Florida is the old railroad crossing gambit. There are lots of semi-deserted country roads and active railroad tracks in Florida. Usually after the grisly event, the bodies are found by someone so powerful that he can have them immediately cremated, frequently before an autopsy can be performed — which is contrary to Florida state law. And they used to tell us horror stories about the KGB! I no longer live in Florida, so if they come after me for writing these words, they will have to think up a new method.

And please note: I am not suicidal. I say that because suicide is a common cause of death in this context. For instance, there is a suspicion that another casualty of NASA is Mrs. Pat White, who alledgedly committed suicide a few years after her husband's cremation. According to post-mortem reports she wasn't suicidal either. Low-level whistle blowers die like flies, and yet General Phillips goes on to head NASA after he told basically the same story.

Borman also complained about the windows that kept fogging up on his Gemini 7 mission and on Apollo 8. North American for four straight years failed to find a solution for such a simple problem as window fogging, yet he couldn't find anything seriously wrong with them. That's about par, isn't it?

Borman was stationed at Clark Air Force base in Manila during 1952. Part of his duty was to inspect a huge warehouse that stored heavy equipment, supposedly ready to roll on an instant's notice. His inspection revealed that "there wasn't a vehicle or a piece of equipment that wasn't in deplorable shape — most of it unusable without major overhauls. The stuff had been there since the end of the war and obviously hadn't been touched since."[31]

The Captain in charge asked Borman to certify that it was in good condition, and he refused. The code of West Point is "duty and honor" and that took precedence. However, when a Colonel insisted that he sign off that the equipment was in good condition Borman

[31] p. 51, COUNTDOWN, Borman & Serling, 1988, Morrow

caved in. "Honor" be dammed. The new moral code is apparently totally dependent upon the rank of the officer who gives the order. Go along to get along!

Next, Borman, still the politician that Collins first pegged him for, tells perhaps the greatest lie of his life. He concludes, "We didn't sweep a single mistake under the rug, and to this day I'm proud of the committee's honesty and integrity."[32] Presumably Mr. Borman had his fingers crossed when he wrote that!

The committee was still in the middle of its stately review process when on April 7, 1967, a House subcommittee was also convened to investigate the fire. The next day a very dismayed New York Times fired off a lead editorial. They used the words, "Even a high school chemistry student knows better than to play with 100% oxygen." The editorial went on to accuse NASA, in general, and those in charge of the Apollo project, in particular, of "incompetence and negligence."[33]

The 204 Board concluded with a real wrist spanker of a statement against NASA, "A sealed cabin, pressurized with a pure oxygen atmosphere without thought of fire hazard; an overly extensive distribution of combustible materials in the cabin; vulnerable wiring carrying spacecraft power; leaky plumbing carrying a combustible and corrosive coolant; inadequate escape provisions for the crew, and inadequate provisions for rescue or medical assistance."

Both committees would prove about as useful as a screen door in space (and about as effective as the politicians who manned the Warren Commission's investigation of the Kennedy assassination a few years before). Like all government inquisitions, they used a method best described as "let's all gang-bang the whistle-blower."

The entire nation saw this process repeated in all its unadulterated glory during the Anita Hill/Clarence Thomas hearings where she exercised futility trying to derail what turned out to be President G. Bush Sr.'s last chance to stack the Supreme Court for the Moral Majority. What apparently no one wanted to understand was that she wasn't testifying for revenge. His actions didn't warrant revenge. She spoke out because of his hypocrisy. At the time of the incidents described by Ms. Hill, Thomas was the head of a federal bureaucracy charged with stamping out sexual harassment.

Along with the few honest good guys on any government committee, who always seem to be trying hard to discover the truth, there are always a couple of truth stoppers and their cohorts, the obfuscators. When any witness dares to try to tell them what they don't want to hear the obfuscators pipe up with a flurry of verbal left jabs to keep them off balance until the truth stoppers can finish them off.

At the beginning of the Mercury Program, NASA tests on pure oxygen proved that the safe pressure limit for breathing was between 2.9 and 6.67 psi. They also concluded that

[32] p. 178, Ibid.
[33] p. 220, APOLLO, The Race to the Moon, Murray & Cox, 1989, Simon and Schuster

pressures "outside these limits would cause severe, if not permanent damage."[34] In plain English, murder begins at 6.7 psi!

Kennan & Harvey have this to say about the fatal test on the capsule: "The day of the plugs-out test, the TV camera inside the space-craft, which was an important piece of flight and test equipment, was absent; its retaining brackets had somehow been bent during installation."[35]

These authors never called it murder, but they continued with this statement: "It is of the greatest significance that the fire extinguishers were located in that (008) spacecraft during its testing. Not only were fire extinguishers included but fire resistant teflon sheets were draped over wire bundles and the astronaut's couches. These particular items, non flight items, were conspicuously absent in command module 012 during the fatal plugs-out test on January 27, 1967."[36]

They also summed up the test with these statements.

> "It was the first and only use of the new three piece hatch."
> "It was the first plugs-out test in which as many as three hatches were closed on a crew in an oxygen atmosphere at a pressure of sixteen pounds per square inch, ..."
> "It was the first occasion of the Apollo emergency escape drill under all-out pre-launch conditions."
> "It was the first occasion when certain non flight flammable materials, such as two foam rubber cushions — were placed in the cockpit."[37]

Later NASA would rule out the use of any material which could be ignited by spark at 400 degree F in pure oxygen at 16.7 PSI.[38] "They included the couch padding, to which astronaut White's body was welded by the heat: this, it emerged, could be ignited by a spark at 250 F."[39] Notice they still had every intention of using 16.7 psi oxygen. Or was it 20.2 psi?

If a civilian corporation killed three men by extreme stupidity, there would be criminal proceedings, trials, and fines. But because the government is the suspected culpable party nothing happens. To repeat: I cannot believe that in such a highly technical field as space that even the lowest paid technician would not have questioned the moronic decision to use 100 percent oxygen to try a pressure test on a capsule with live electric panels, as well as locked-in and strapped-down astronauts; especially on a capsule that would never fly.

[34] p. 39, THE HISTORY OF MANNED SPACE FLIGHT, Baker, 1982, Crown
[35] p. 21, MISSION TO THE MOON, Kennan & Harvey, 1969, Morrow
[36] p. 57, Ibid.
[37] p. 20, Ibid.
[38] p. 195, JOURNEY TO TRANQUILITY, Young, Silcock & Dunn, 1969, Doubleday
[39] p. 198, Ibid.

At the time there was talk that the Apollo Program might be scratched. But even if 50 people had been killed, the operation would have continued with no more than a brief pause, because the bucks were too big. As Collins points out, "I don't think the fire delayed the first lunar landing one day, because it took until mid-1969 to get all the problems solved in areas completely unrelated to the fire."[40]

According to the newspapers, NASA committed another unequivocal example of utter stupidity on March 19, 1981. They had a chamber on the Space Shuttle Columbia filled with nitrogen, and seven people entered it. Two died and five were injured.

The cremation was mass murder. If not it was unconscionable stupidity. We may never know for sure. What I am sure of is that the entire Apollo Program was a show; a simulation produced by the CIA, directed by NASA, invested in by Congress, and paid for by Mr. and Mrs. American Taxpayer! To protect their multi-billion dollar income the CIA murdered three astronauts on Pad 34, plus four more on plane rides and one in a car.

[40]p. 276, CARRYING THE FIRE, Collins, 1974, Ballentine Books

7 SPACE NAVIGATION

When man first journeyed out onto water, he navigated in the same manner that he used on land: he saw where he wanted to go and pushed himself in that direction. It was an aiming process. To this day, whenever there is good visibility and deep water in a harbor or river, this is still the method used. It is called piloting or the taking of visual bearings. Over the years many piloting aids have been developed such as the compass, depth finders, charts, buoys, and lighthouses. With these instruments the pilot determines his present location and aims the boat to the desired location, whether it be a fishing hole out of sight of land or a dock across a broad bay.

Centuries passed and boats became safer, enabling man to venture further from shore. But even with good visibility, once out of sight of land, every wave looks alike. Even when men tried to steer a straight course a ship would wander, pushed off course by wind and ocean current. Man slowly developed crude celestial navigation using the observed east to west motions of the Sun, Moon, and stars, all of which were only usable under conditions of good visibility.

Whether on land, on sea or in the air, the only way you get to your destination, if it can't be seen, is by knowing both your approximate current position and the location of your destination. Once this information is known, in decent weather, it becomes a simple matter of pointing yourself in the proper direction and going there.

At sea, out of sight of land, there are two ways to do this. The ancient Polynesians used the stars with the knowledge that night after night they parade over the Earth in almost exactly the same great circles. The deviation from this course varies only slightly night to night during the entire year, and the pattern repeats year after year.

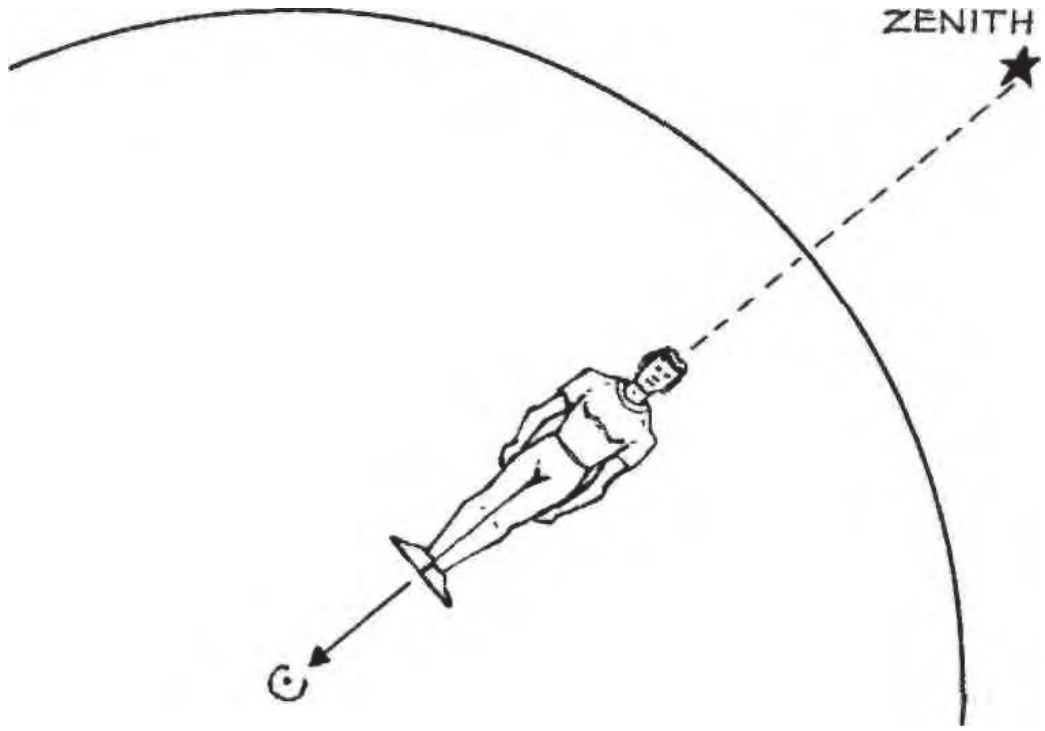
The Polynesians learned which stars culminated (reached the zenith) directly overhead a given island. Since a star will do the same thing for hundreds or thousands of years, that star becomes a beacon for the world's tallest lighthouse whose footings are located in one particular geographic location. By sailing to the west of that rising star they could zero in on their destination without compass or sextant. In this manner, island by island, they learned to navigate the immense Pacific while European seaman hardly dared leave sight of the coasts.

Asiatic seamen learned similar astral navigation as there is evidence that the Chinese reached the West Coast of both North and South America. Eventually western astronomers

developed astronomical charts of the Sun that showed its latitude on each particular day. Since the Sun changes latitude at less than a quarter of a degree per day, if you measure the altitude of the Sun at high noon you can use this information to create a chart or later to find your latitude. It involves no more than subtracting the Sun's angle of elevation at high noon (culmination) from 90° then adding it to the Sun's known latitude that day. Before we get to navigation in space, it's helpful to know a little more about earthly navigation.

The angle of elevation was first measured by knotted strings held in the hands. The cross staff evolved into the octant, and eventually became the sextant that is still in use. The bands of latitude are natural divisions and are determined by the equator and poles. Longitude is artificial. It starts with an arbitrarily chosen point and had to wait for the development of an accurate seagoing clock before it was helpful for navigation. Once the west had an accurate sea going clock and it's astronomers provided adequate almanacs or ephemeri-des, we began to use the stars for navigation.

The GP (Geographical Position) of any celestial body is the ground point directly under a body at its zenith (directly overhead) as shown below.



To determine a GP it is necessary to have a sextant to measure the angle of elevation of that body (the Sun, planets, selected navigational stars, or the Moon) from our horizon. The exact time of that "shot" (observation) must also be known. From that data you can find the geographic position (GP) of the body from an almanac.

An almanac consists of a series of tables prepared by astronomers that show the positions of the Sun, Moon, major planets, and the navigational stars every hour of every day for the year. When an observation isn't made on an even hour, the GP can be easily extrapolated from the tables.

With the advent of electronic navigation systems, celestial navigation became unnecessary. However, just like the optical method, these systems (like loran) also depend on measuring your distance from the known geographic locations of land-based transmitters. In general, each of these systems requires the measurements from three different bodies for a fix. The exception to this rule is the use of a high noon shot of the Sun. In itself, it gives you latitude, and if you know the time it also gives you longitude.

Each system generates a single circular line of position (LOP) at a radius equal to your distance from the observed body's geographic location at the instant the observation or radio reading was made. It is axiomatic that you could be anywhere on one particular line.

Suppose that you knew you were 35° away from the geographical position of a transmitter located at 45° N latitude and 30° W longitude. If you had a large globe and a large compass you could set the compass to that arc distance by laying out along the equator. Then you could stab the compass point into that 45° N and 30° W and draw a large penciled circle directly on the globe. This is LOP as shown on the first drawing.

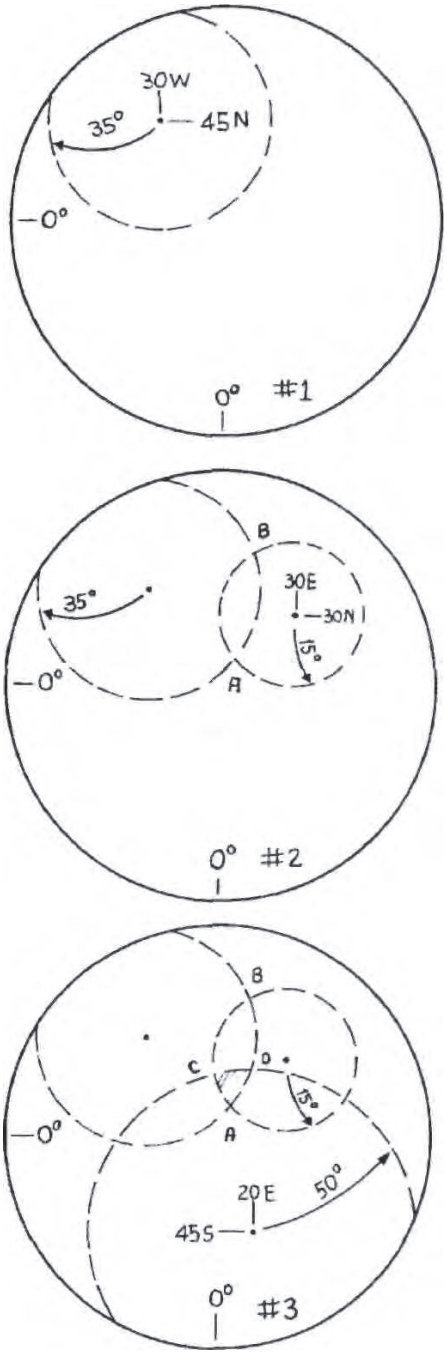
The second transmitter or star is located at 30° N and 30° E at a distance from you of 15°. You reset the compass to that arc distance and stab the point into the above location and again draw a full circle which is LOP 2 as shown in the second drawing.

This second circle intersects LOP 1 at points A and B. Your position is close to either of the two intersections.

You have a third observation (shown in the third drawing) which places you at 50 degrees from 45° S and 20° E. You set the compass to 50° stab it into the above location and draw LOP 3.

LOP 3 intersects at the previous LOPs at points C and D, giving us a small shaded spherical triangle. You are located in that area. If the triangle is about a degree wide, then your uncertainty in position is about 30 nautical miles.

In an actual trial you could wind up with an uncertainty of only a few miles. Considering the size of the world, this is not much of an error. Navigators on small boats regularly work with sextants and Sight Reduction Tables and get their fixes to this accuracy.



The lines of position are configured arithmetically by both systems using spherical trigonometry as the basis of calculations. All navigation is based on intersecting LOPs, even the SATNAV system developed in the early 1960s.

This system works by an onboard combination of radio receiver and computer. The data used is transmitted in bursts from a rapidly moving satellite which is in a polar orbit. The continuous bursts of data also contain time signals and the satellite's known position.

The ship's relatively slow moving or stationary receiver receives this data and measures the doppler shifts in the sequential rapid transmissions caused by the relative motion between your receiver and the satellite.

The internal computer performs a series of rather complex calculations on the changing frequency of the transmissions from that satellite. It then draws mathematical LOPs, finds the intersection, and displays or prints your position, velocity, and much more. The accuracy to a ground station can be about 50 meters (yards) and to ships at sea 200 yards. However it wasn't until late in 1971 that this type of accuracy was achieved.[1]

The one thing all three of these systems have in common is that the lines of position are all drawn on the surface of the Earth, which drastically reduces the number of possible positions. Even if you are in an airplane or submarine, your position is, relatively speaking, on the Earth's surface. A surface is further divided into land and sea areas which are all additional reference points when we are trying for a fix. The Earth also has a magnetic field that tells us north from south, as well as celestial bodies that appear to rotate from east to west as the day progresses.

Our celestial navigation by sextant depends upon our ability to "shoot" (measure angle of elevation from the horizon) certain of the brighter navigational stars whose geographical positions are easily determined. The navigator picks them out through familiarity with the various constellations, which, though the stars do move, change shape so slowly that a lifetime could pass before any change could be detected by so crude an instrument as even the best sextant in the world.

With a sextant you can shoot a particular star and then correct the angle for various mechanical and observational errors. What you really want is the angular distance of the star from your zenith. But since the horizon is 90° from your zenith, you can subtract your measured angle and determine the distance of that star's zenith from yours. From this you can get an LOP just like we did in drawing # 1. Repetition of this process, using other stars, will develop a fix as shown in drawing # 3.

Now let's turn to navigating in space. The only thing that the stars in any constellation have in common is that they all share the same general direction from Earth. They have little else in common except that they are all a part of our galaxy. Although each star itself is in very rapid motion in relation to our Sun and the rest of the stars in that particular configuration we call a constellation, they are so distant from our Earth that they seem to be stationary. Were this not true, the "fixed" stars of constellations would become unrecognizable in a short period of time. We know from historical records that they stay the same.

Michael Collins said, "The basic idea behind the Apollo guidance and navigation system was simple enough. It all began with the stars, whose position in inertial space was well

[1] p. 1047, AMERICAN PRACTICAL NAVIGATOR, Bowditch, 1977, Government Printing Office

known and unchanging.... They are so far away, of course, that they appear the same whether one is on earth or a mere lunar distance away."[2]

While preparing for the Moon landings he claimed that navigation was his personal hair shirt. He goes on to say, "I had made several trips to Massachusetts Institute of Technology near Boston, and had tried my level best to suffer through a couple of weeks of "simple" explanations of the system by their experts, but I always came away shaking my head."[3]

Perhaps he felt he was being told nonsense something like, "The framus wittigates on the thrum rod activating the holcroid. Once it dizzies you are halfway home." Over the years whenever I run into something that doesn't make sense I have great problems with it. I cannot memorize it and I can't work with it.

For their navigation package NASA went to MIT early in the game and asked for a method that would give the Apollo program the ability to go to the Moon and back. A couple of professors produced the package on time. In fact it was one of the few times that anyone met a NASA schedule.

Michael Collins was designated the navigator for Apollo 11. In his book he lists the 37 navigation stars they were to use, plus their corresponding octal numbers which identified them to the computers. Here's how Michael explains that navigation package.

> "The astronaut, peering out through either his telescope or his sextant finds one of the chosen few, superimposes a + on it, and pushes a button at the instant of perfect alignment. He then tells the computer which star it was, by numbers. Repeating this process on a second star allows the computer and the platform to determine which way the spacecraft is pointing. So we now know which way is up? Well, not exactly, because "up" is a rather fragile concept meaning away from the center of the earth, a direction opposite the gravity vector used to clutch us tightly by. But suppose we cannot even see the earth in our window, suppose we are floating free of earth's gravity. What now, M.I.T.? Back to our friendly stars. We simply define a new up-down and left-right, using the stars in place of earth. All will be well as long as we all play the game by the same rules, as long as the ground controllers send us instructions using the same stellar frame of reference. Now we are free of all terrestrial conventions and can correct our course to and from the Moon by pointing in the proper direction relative to the stars."[4]

Collins seems to be saying that the sextant had a cross hair in its optics. But sextants don't have cross-hairs. Curiously, I went sniffing through his book and found out that sure enough he was talking about a sextant. Almost 100 pages later he continues:

[2]p. 288, CARRYING THE FIRE, Collins, 1974, Ballentine Books
[3]p. 288, Ibid.
[4]p. 289, Ibid.

> "Unlike Gemini, however, Apollo has a fancy computer tied to the optics, and now I call on it for help; it responds by swinging the sextant around until it points at where it thinks Menkent is. Aha! There it is, in plain view, and it's a simple task for me to align the cross-hairs precisely on it and push a button at the instant of alignment. Now I repeat the process using Nunki, and the computer pats me on the back by flashing the information that my measurements differ from its stored star angle data by .01 degree. It displays this information as 00001. In M.I.T.-ese, a perfect reading of 00000 is called five balls."[5]

Aha! There it is, in plain view: he does claim his sextant has a cross-hair, but this cannot be true! A sextant is an instrument that uses mirrors mounted on a calibrated movable leg. The essence of the instrument is to superimpose one object over the image of another thereby measuring the angle between them. On Earth, one of the objects is usually the horizon but here he is measuring the arc distance between two stars. As I said, there is no reason to have a cross-hair.

The instrument he probably means is a theodolite. This is a telescope with cross hairs with accuracy greater than a sextant; although it is extremely hard to believe that a pilot turned astronaut doesn't know a sextant from a theodolite.

All the measurement of the arc angle between two stars could do was align the capsule. That was done by azimuth and elevation by comparison to the ship's IMU (Internal Measuring Unit). The stars are unchanging to instruments as gross as the finest theodolites in the world; Collins accomplished nothing more than allowing them to know the ship's heading to the accuracy with which the shot was made.

The stored angles they speak of are the arc angles of separation between any two of the navigation stars. The "five balls" was part of the razzle-dazzle in that they only told whether the shots were accurate or not. It was an obfuscation, and this man — who was specially trained by MIT in space navigation — never figured it out.

Imagine that your ship is in a very high orbit around the Earth. Also imagine that you have a gunsight right down the center of the ship. Now you point the whole ship at one particular star and then take great pains to damp out all the ship's motions so you're still "aimed" at that star. After one orbit, as you came out from behind the Earth, you look for that star. Would you be shocked to see that the star was still in the gun sight? In fact, would you be surprised to see it stay there, day after day, no matter the time period? Six months later the Earth will have carried you halfway around the solar system, but your ship would still be pointing at that star. In fact, that same star should be fixed in your gunsight for years.

We are familiar with the astronauts speaking of sequential sunrises and sunsets and we can picture this happening as we look out a window. However, even if the ship were not in

[5] p. 373, Ibid.

an axial rotation of 18° per minute, this still couldn't happen. Since the ship's orientation cannot change during the orbit, even if the cockpit was loaded with windows, there would come a time when the Earth was at the rear of the ship. Only a spaceship in powered flight could follow its nose around a planet. If it were in orbit it could not do this without fracturing Newton's First Law of Motion. The law says that a body in motion tends to stay in motion.

Each particle of that space ship is a body of mass, and gravity (whatever it is) treats each without preference. For the nose to be more attracted than the tail would violate that law. But, while none of the astronauts seem to say they look out the same window, you are led to believe this is what they are describing. Only in science fiction films can a Star Trek-type ship orbit a planet nose first.

Yet on the Gemini 12 mission that's precisely what was claimed. In this case the capsule wasn't following its nose; it had its nose pointed down at Earth. In fact, they also had the Agena target ship doing the same thing. While they were docked to the Agena, Buzz Aldrin and Jim Lovell gave the Agena commands to assume a vertical position. They then undocked, backed away, and made taut the tether they had fastened to the Agena. The next 2 hours were spent steadying the capsule so that it would remain in the same position relative to Earth.

After two more orbits they let go of the Agena, ". . . and there we were — two dead vehicles captured by gravity in a vertical position going around the Earth."[6] How can this be?

Yet even in drawings that show orbiting capsules in The Illustrated Encyclopedia of SPACE TECHNOLOGY each capsule flies around the Earth maintaining its attitude by rotating once each orbit in relation to the surface of Earth instead of to the rest of the universe as it must actually do.

Michael Collins said the stars are unchanging. So unchanging that, to this day, we can only directly measure the distance to less than ten thousand stars out of the billions that surround us. This measurement can be made only because of the difference in apparent position of a star in relation to stars that are optically close to it but which are far more distant from Earth. Only after the Earth has moved 186 million miles to the other side of the sun in its orbit can the movement be measured.

This angular shift is called the parallax of a star. It's so small that it can never be measured by any device that mechanically divides the circle like a sextant or theodolite. Parallax is measurable only by photographic methods. It can't be eyeballed. The measurement is accomplished by optically enlarging photos taken by astronomical telescopes at each extreme of our orbit. The photos are then compared. If a star shows any displacement the magnified movement is delicately measured and compared to the known

[6] p. 132, HEROES IN SPACE, Bond, 1987, Basil Blackwell Inc.

arc distance separation of the adjacent stars that haven't "moved" in that same photo. The greater the displacement (parallax), the closer the star.

Its actual distance can then be calculated by plane trigonometry, using the distance the Earth moves in six months as the baseline (186 million miles) and the angle of displacement measured from the photos.

Alpha Centauri, which appears to be one star seen by the naked eye, is actually a triple star system. At 4.3 lightyears distance from Earth it has the greatest parallax of any star. When measured by the 93 million miles the Earth moves during one half of an orbit it shows a parallax of .75 seconds of arc.

If we tried to use the distance to the Moon (239,000-miles) as a baseline the angle would be 389 times smaller, or .0019 seconds of arc. On page 248 the 1993 World Almanac lists the parallax of almost 100 of the closest stars, and the smallest parallax listed is .01 seconds of arc. So Mr. Collins, regardless of what you were told, a cross-haired sextant, couldn't possibly have measured these angles. Nor can anyone navigate the solar system using a mechanical division of the circle on the movement of even the closest stars.

Collins says he was thrilled when the unit flipped up its five balls in praise, but this represented .01° accuracy — not an exceptional result by today's standards. There are 60 nautical miles to a degree and .01° equal .6-nautical miles. Many navigators on small wave-tossed boats equal this performance. The SATNAV system with its 50-meter accuracy makes .6 nautical miles look amateurish. The new surveying SATNAV instruments claim accuracy within inches. In the next section we will see how that .01° accuracy compares with the rest of NASA's claims.

Collins seems to believe that his measurements resulted in a navigational fix. He says, "For example, I was trained to navigate back from the moon by using my sextant to measure the angles of five selected stars and the Earth's horizon; however there was no way I could determine our position as accurately as the giant earth-based radars,..."[7]

He then correctly added, "Our own ability to navigate home independent of Houston is very poor when we are close to the moon, so for the time being we are dependent on earth tracking for our position."[8]

In the next section we will examine the actual ability of radar to have fixed their position. In his new book LIFTOFF he admits, "By comparing the position of the stars with the stable table [IMU], and noting the gimbal angles, it was possible to calculate the direction in which the space craft was pointed. This procedure did not explain where in space the craft was located, only the direction it was pointed.[9]

[7] p. 151, LIFTOFF, Collins, 1988, Grove Press
[8] p. 288, CARRYING THE FIRE, Collins, 1974, Ballentine Books
[9] p. 131, LIFTOFF, Collins, 1988, Grove Press

Then he goes on to tell us that the where was given by three accelerometers that sense motion and update the position by computer calculation. However, he writes, "In actual practice the state vector was loaded into the Command Module computer on the launch pad and updated periodically in flight by information telemetered from the ground."[10]

As I read about NASA's MIT way of lunar navigation I began to wonder how I would navigate to the Moon. It took about three days to dissect their methods, and another three days of insanity of trying to create my own. I became more confused with each passing hour until I just gave up one night and went to bed early. I had a dream in which I was lost in space. In desperation I looked out the window and saw the clearly visible planets and Earth. I wished I was in a boat because there you can steer for anything you can see. Then it dawned on me that celestial navigation had to be invented on Earth because once out of sight of land every wave looks like every other wave. All I had to do was aim for the Earth and tell the computer to give me a little Kentucky windage for lead.

I realized that there are no mists, storms, or fogs in space to hide my destination. Despite what the astronauts claim, one can see the sun, stars and planets all the time by just changing windows. Provided one has a little fuel to waste, all you have to do is lead your target and point the nose that way.

For more concise navigation the equatorial plane would have to be defined by at least three stars which are coincident with it and by simply measuring the azimuths and elevations to any three planets. Then by consulting an appropriate almanac we could accurately locate our position.

7.1 ADDENDUM 12/96

All navigation is based on our ability to dissect the circle. Our mathematical ability to do this is magnitudes of order past our physical ability. As Collins finally admitted, the only thing a star can do is to determine the axial roll, pitch, and yaw (attitude) of a space ship. The astronauts have always claimed that Harth radar was used to fix their position. This is impossible! And although I tried for years to work out a simple method of space navigation based on the observation of the planets I repeatedly failed. It probably can be done but because the planes of the planets are tilted to ours it introduces one more factor. By the way, the Moon also bobs up and down like a merry-go-round horse in an 18-year period called the Saros cycle.

I have just figured out that this radar business was just another NASA half-truth and that the only accurate method would be to use three or more antennas as distance measuring equipment (DME). Naturally they would all have to be located on the hemisphere

[10] p. 132, Ibid.

that was in visual sight of the ship at the time. The huge radio dishes would have been preferred because they are directional and can seek and peak a signal but other antennas would also have worked. All they needed then was to know the geodetic distances between the antennas and the exact time the ship's signal was sent. This could have been done either by transponder responding to a signal from a master antenna, or by a very accurate shipboard clock. The resulting accuracy in position could be less than 100 feet. By using this method, depends on electronically dividing a second instead of physically dividing a circle.

The hard part would be determining the direction and magnitude of the engine burn. This is because the ship is being influenced simultaneously by Earth, Sun, and Moon, and all of these forces are changing as the ship's position changes. In addition, both Moon and Earth are also moving. Complicated, yes, but not impossible. Because of the half-truths concerning the radar fixes, I had begun to doubt even the unmanned probes.

8 EVERY SHOT — A HOLE IN ONE

Despite the fact that NASA's space navigation process was something of a sham, they claimed astounding accuracy in everything they did. Nine times in a row the Apollo capsules slipped into lunarorbit without needing a major burn to correct their trajectory. Then they elaborated on their accuracy. The LEM, with its center of gravity far above the single rocket engine powering it, landed within spitting distance of the target site five out of six times. It was guided by Houston Ground Control operating at a distance of 230,000 miles. All this accuracy was at the end of a radio and/or radar transmission loop of two and a half seconds duration. Yet 25 years later, they still can't land the shuttle here on Earth if there are clouds over Kennedy Spaceport!

More importantly, six times in a row the top half of that awkward LEM machine made precise rendezvous with the command capsule after lifting off from the lunar surface. All this using a dynamically unbalanced vehicle. To top off the phenomenal navigation and micro-control of their rockets, they made nine deadly-accurate re-entries into the Earth's atmosphere, again apparently without the need for any major corrections.

Once upon a time I was a young, good-looking carpenter. A rich middle-aged golfer hired me to frame and sheathe a big lawn shed over the weekend. I arrived at his place at seven on Saturday morning and started the job. When he came out he asked me if I was a golfing man. I told him that being a caddy when I was a kid was as close as I cared to get to the game. His superior smile told me all I needed to know, but then he introduced me to my "helper" who blushed. She was his gorgeous young wife. Then he left to catch a fast eighteen at the local links.

By nine a.m. his wife and I were old friends as she helped me hold up and plumb and brace the walls. Once the braces were set I intended to make my move, but his car zipped into the driveway. Damn! He must have seen my eyes light up when he introduced us, or he knew her better than I did. Exiting his car, he wore a different kind of smile as he proudly handed me his score card. The man had played only nine holes on one of the roughest courses in the county. Imagine that! On a busy Saturday he had raced through the front nine in about an hour. Not only that, according to his card, he had scored a hole in one on each tee.

I asked why he hadn't played the other nine holes? He smiled and said, "I quit the game while I was ahead." Looking back — with twenty twenty hindsight — NASA did the same dern thing: scored nine holes in one and quit the game.

The authors of most of the books I read for reference (over and over again) accepted every pronouncement that NASA made without question. They even embraced their astounding navigational accuracy! It was as if Moses himself pointed out each law on the tablets as God enunciated them. I also began to suspect that maintaining a governmental press card is a matter of practicing the philosophy of the three monkey brothers (Speak, See, and Hear) whose last names are No-Evil. In any case, it seems every author suspended his critical faculties when NASA spoke.

Michael Collins, the navigator on Apollo 11, waxed ecstatic when he claimed: "On the return trip, the atmospheric "re-entry corridor" or zone of survivability, or whatever you wanted to call it, was only forty miles thick, and hitting a forty-mile target from 230,000 miles is like trying to split a human hair with a razor blade thrown from a distance of twenty feet. Granted, the primary responsibility for keeping the razor blade aimed precisely toward the absolute center of the hair would be the job of powerful ground tracking radars, coupled to gigantic computer complexes... The key to it would involve measuring the angle between a selected star and the moon's or earth's horizon, but how accurately could this be done?"[1]

Ostensibly, on the outwardbound trip, our Earth based radar would have had a distance reading on the capsule until it was out of range. That distance was surely much less than 10,000 miles. After that only a radar transponder could accurately give its distance almost all the way to the Moon. However, even with a transponder, nothing we had then, or have now, could have given Houston an accurate bearing. Without that, all that could have been known was that the ship was somewhere at the base of a large, rapidly expanding cone.

The power of a radar transmitter to hit the Moon is not in dispute here. Collins noted,

> "As early as 1963, the DSIF had bounced a radar signal off the planet Mercury, over 60 million miles away, so we weren't too concerned about its power, but its accuracy was of vital concern to those of us who would be navigating with its help."[2]

Real accuracy of bearing, for space navigation, is something that radar didn't possess, doesn't possess, and never will possess. A radar beam simply spreads too much for the exact accuracy required by space navigation. Even light spreads. If you take a powerful flashlight with a 3-inch parabolic reflector and shine it at your feet, the spot of light is almost the same diameter as the lens itself. Shine it across the street and the beam has spread to 24 inches. It spreads even though the reason for the imperfect parabolic reflector is to keep the light rays as parallel as possible. The same imperfections apply to radars.

Yet the Apollo 10 carrying John Young, Tom Stafford, and Eugene Cernan was allegedly tracked by radar as they came around from the back side of the Moon, after the LEM had

[1] p. 65, CARRYING THE FIRE, Collins, 1974, Ballentine Books
[2] p. 103, Ibid.

separated from the command capsule. Peter Bond said "... the Madrid tracking station picked up two craft flying in formation as they rounded the east limb of the moon."[3]

Most of us think that a laser beam is a coherent beam of absolutelly parallel light rays. It is coherent but the parallel part is not precisely true. Even laser light spreads slightly. According to Richard Lewis, one of Neil Armstrong's jobs was to set up a 17.9-inch square laser reflector on the Moon so that we would know within 75 meters the distance of the Moon. When the Earth laser was "Aimed and fired through the telescopes, the laser beam made a splash of red light on the Moon about 2 miles in diameter encompassing the mirror."[4]

Working out the trig, we find that the each edge of the beam dispersed .000239°.[5] If such a test was actually made, a reflector could have been placed on the Moon by a probe just the same way that Surveyor I I I was landed. This practical demonstration shows that neither beam, light, nor radio waves, consists of parallel beams. In fact, current radar beams have a horizontal beam width that ranges from .65 to 2°and a vertical width from 15 to 30°. This accuracy was current about a decade after the Moon shots ended.[6]

At the average distance of the Moon, Earth's radar beams were a minimum of 2711 miles in diameter.[7] Yet NASA claims they were able to detect the command module at that range. Richard Lewis in writing about the Apollo 12 mission reports, "The Control Room people exhaled with an audible sigh. Conrad reported that his instruments showed Apollo 12 to be in a 170 by 61.8 mile orbit. Earth radar refined this to 168.8 and 62.7 miles (nautical)."[8]

To make such a claim NASA had to be able to resolve, in range, a virtual fly speck of a command ship orbiting that close to the Moon. And, at the same time, they had to resolve the bearing. Range without bearing means as little as does bearing without range. The American Practical Navigator has this to say about resolution of bearing when speaking of using radar to navigate. "However, if a visual bearing is available, it should be more reliable than one obtained by radar."[9] Visual bearings are usually run with a pelorus which is nothing more than some type of "gunsight" affixed to a base that is divided by degree marks. A quarter of a degree in accuracy is considered excellent.

Without getting into the technicalities of radar pulse lengths, which determine resolution of range, let us examine an operator's radar screen. It is a CRT (cathode ray tube) that displays the target as a blip of light. If Houston had 24-inch screens at that time, (very

[3] p. 179,HEROES IN SPACE, Bond, 1987, Basil Blackwell Inc.
[4] p. 69, THE VOYAGES OF APOLLO, Lewis, 1974, Quadrangle
[5] Tan Angle = 1 mile / 239,000 mile Angle = .000239731 degrees
[6] p. 944, AMERICAN PRACTICAL NAVIGATOR, 1977, Bowditch
[7] Half width = (tan .65/2) * 239,000 = 1355 miles Diameter = 2711 miles
[8] p. 98, THE VOYAGES OF APOLLO, Lewis, 1974, Quadrangle
[9] p. 961, AMERICAN PRACTICAL NAVIGATOR, 1977, Bowditch

doubtful) half the screen's diameter would have represented about 240,000 miles. If detection were possible the command module at a distance of 60 miles from the Moon would have made a blip about .003-inches away from the background bounce that represented the Moon (the diameter of a human hair).[10] Even if the capsule was caught at the edge of the Moon, how did the technicians measure that on a curved glass screen? And how many times could they electronically change the scale?

In a book by NASA engineers published in 1963, they write about radar altimeters. We find, "The range is limited to near orbital altitudes of a few hundred kilometers above the surface."[11]

In a similar situation Skylab was launched on May 14, 1973. It had an attitude problem (like me). Despite the fact that its orbit was fixed close to Earth, it still needed constant accuracy in alignment. For this purpose it carried two systems, one composed of control-moment gyroscopes (CMG), and the other, a thruster attitude control system (TACS). David Baker said this about Skylab's attitude problem, "Yet although the combined CMG/TACS equipment could achieve pointing accuracy of (plus or minus 2 degrees), the sensitive solar telescopes needed a much finer targeting system than that."[12]

Yet, in page 373 of his book, Collins claimed the Apollo missions operated at .01° accuracy! Did NASA forget how to make such an accurate IMU (Inertial Measuring Unit) between the launch of Apollo 17 and the launch of Skylab? Or did NASA lie and give Collins a navigational figure 200 times more accurate than reality allowed? Or did Collins lie? Remember it takes five balls to shoot for the moon!

Time after time during the Apollo missions, NASA described the course correction "burn" performed halfway to the Moon as 'minimal'. At the start of each trip, using this plus or minus 2° standard for an Apollo mission, I calculate a circle of uncertainty at the end of the 239,000-mile trip at 16,692 miles in diameter.[13]

At the halfway mark the circle of uncertainty around the Moon would be 8346 miles in diameter. One could be over 4,100 miles off course and possibly only detect half of it. A burn to change inertial vector of 50 tons of a space ship by a few degrees, would certainly not be a small affair, because the center of mass would want to stay on that old course.

Here on Earth our vehicles rub away inertial vectors by friction. A car does it with tires that scrub by friction on the roadway as it changes direction; an airplane by the resistance or friction of the air developed in banking; and a boat by the high friction of the water. However, in space there is no friction! Cancellation of the inertial vector requires a burn

[10] 12 in /240,000 mi : x in / 60 miles = 720 / 240,000 = .003 in

[11] p. 184, ASTRONAUTICAL ENGINEERING AND SCIENCE, 1963, Stuhlinger, Ordway, McCall & Bucher, McGraw-Hill

[12] p. 456, MANNED SPACE FLIGHT, Baker, 1981, Crown

[13] Semi Diameter = Tan (2 degrees) * 239,000 = 8346 miles

at right angles to the course powerful enough to accelerate the ship so that the center of mass is on a new vector heading for the lunar ring of entry. More importantly, an error of this magnitude would cause many more frequent adjustments in course.

From the Earth, the Moon's area of this circle of uncertainty is 218,829,885 square miles.[14] To find the odds of hitting the entry target ring around the Moon we must first find the area of the plane surface of the Moon. It is 3,664,353 square miles.[15] Collins claims the ring of return to Earth is only 40 miles thick, and if I generously allow the ring of entry to the Moon to be 5 times that size (200 miles), the total area encompassed would be 5,147,185 square miles.[16] Subtracting the Moon's area from this leaves us with a target area of 1,482,832 square miles.[17] This seems rather large. However, in comparison with the 218,829,885 square miles of uncertainty we find the probability for hitting that ring with only one burn to be — .67 percent.[18]

If NASA made no other corrections, as they claim, they would have only one chance in 147 of slid in g into the lunar ring of entry. This figure is derived by comparing the area of the lunar entry zone and the area of uncertainty.[19] To claim to have done exactly this, eight times in a row, against odds such as these, boggles the mind — not to mention Murphy's Law!

It is even more unbelievable that Houston, at the long end of a 1.3-second transmission time lag, was supposed to make Go-No-Go lunar landing decision for each of the LEMs. This means that anything transmitted took 1.3 seconds to get to Houston, then after a decision was made, it took another 1.3 seconds to get the information back. Would you like to drive in traffic like that?

Harry Hurt writes how the LEM was roughly 7,000 feet above the Moon's surface waiting for the Go-No go decision from Houston. "According to ground based radar, the spacecraft was diving toward the lunar surface a good fifteen mph (twenty-three feet per second) faster than called for in the flight plan."[20] Wow! Their resolution in range was better than anything ever done before. Or since! Not only could that radar tell its exact altitude, it could also divine its velocity down to one foot per second. Wow!

Despite all this exactness, the Eagle Lander of Apollo 11 fame missed the chosen landing spot. Michael Collins writes, "Of course, the ground can take its own measurements as well, but it has no way of really judging where the LM came down, except by comparing Neil and Buzz's description of their surrounding terrain (lurain?) with the rather crude maps Houston has."[21] (By "ground" Collins means "mission control").

[14]Circle of uncertainty) = π * 8346 * 8346 = 218,829,885 square miles
[15]Area of Moon = π * 1080 * 1080 = 3,664,353 square miles
[16]Area Moon plus entry ring = π * 1280 * 1280) = 5,147,185 square miles
[17]Area of target ring = 5,147,185 - 3,664,353 = 1,482,832 square miles
[18]Probability = 1,482,185 / 218,829,885 = .0067 or .67%
[19]Odds 218,829,885 / 1, 482,185 = 147 to 1 against
[20]p. 162, FOR ALL MANKIND, Hurt, 1988, Atlantic Monthly Press
[21]p. 407, CARRYING THE FIRE, Collins, 1974, Ballentine Books

By what magic could this happen? In fact, the next day Houston still couldn't figure out exactly where the Eagle had landed. "For $64,000, we are still trying to work out the location of your landing site, Tranquillity Base. We think it is located on LAM-2 chart at Juliet 0.5 and 7.8 ... we are wondering if Neil or Buzz had observed any additional landmarks ... which would confirm or disprove this." Collins continues, "No wonder I couldn't find the LM; nobody seems to know where the bugger came down!"[22]

Then General S. Phillips, the man who originally made the incriminating notes on North American Aviation, and who was now head of NASA, issued an edict. He demanded pin-point landings from then on despite lunar Mascons (abrupt gravity changes). One of NASA's navigation experts, Emil Schiesser, then proposed to track the spacecraft's orbit by the doppler effects created by their radio transmissions as the spacecraft moved. They had all the Apollo 11 transmissions on tape. He said he could use the minute frequency shifts to calculate the orbit.

> "With this predicted pattern of frequencies in front of us, we can watch what the actual frequencies are, and calculate the difference. Then we can use the difference between the predicted and the actual frequencies to decide how far off target we are. It was Tindall reflected, "astounding " — simple and obvious after you heard it, as elegant solutions seem always to be.
>
> No matter what the source of navigational errors — mascons, venting of the spacecraft, changes in trajectory from firing of the R.C.S. thrusters, or an imprecise burn — Schiesser had given them a way to determine precisely how much they needed to change the planned course of a descending LEM."[23]

This method presupposes that the radio used in tracking has absolute frequency control down to the millionth of a cycle. Even if they had this astonishingly accurate instrument, NASA still had no more than range without bearing. Still Schiesser was regarded as a genius for thinking this up. I was surprised at first that NASA didn't promote him for a Nobel Prize, but then I learned that NASA was using this rather obvious method before 1963.[24]

To further disparage this crowning jewel, self-placed in NASA's navigational crown by NASA's other experts in the summer of '69, consider one more tidbit. The SATNAV system, which depended upon doppler changes, had been fully deployed in 1964.[25]

With the later missions, Richard Lewis quotes Houston watching the LEM land during the Apollo 12 landing. "CAPCOM: Intrepid, Houston. You're looking good at 8. [Eight miles uprange from the landing site.]"[26] In fact, they looked so good that the LEM was

[22] p. 432, Ibid.
[23] p. 383, APOLLO The Race to the Moon, Murray & Cox, 1989, Simon & Schuster
[24] p. 182, ASTRONAUTICAL ENGINEERING AND SCIENCE, 1963, Stuhlinger, Ordway, McCall & Bucher, McGraw-Hill
[25] p. 1029, AMERICAN PRACTICAL NAVIGATOR, 1977, Bowditch
[26] p. 106, THE VOYAGES OF APOLLO, Lewis, 1974, Quadrangle

intentionally aimed at the Surveyor 3 lunar probe. Indeed, it parked within 100 meters of the crater rim that held the old Surveyor. Here's their version of that tale:

> "At midnight Houston time, November 18, four days after Yankee Clipper's encounter with lightning, Emil Schiesser stood behind two Martin contractor personnel at their consoles in a corner of the first floor of the Control Center, near the computers. As the LEM Intrepid appeared at the edge of the moon, the screens began to fill with the tracking data they had been waiting for. The three of them began filling out their cheat sheets, more formally known as Procedure Sheets — they looked something like tax forms — copying the numbers from the screen. Then as Conrad and Bean streaked across the face of the moon under powered descent, the three of them began figuring out the value for Noun 69 — by hand. The Control Center's computers didn't know how to do something as simple as multiply two numbers, Schiesser said, and they hadn't bothered to bring in a mechanical calculator. They scratched out their calculations, passed the number to the Trench, who gave it to Flight, who told CAPCOM to transmit it to the crew."[27]

Man! What accuracy! Big computers that don't multiply? Trajectory ballistics by hand? In seconds? Golly! Hooray for Hollywood! How can anyone disbelieve this?

Below Harry Hurt has transcribed the conversation between Conrad and Bean as they left the LEM which absolutely verifies that Richard Lewis's statement is true.

> "Conrad ventured a few more steps away from the LM, steadied himself in the powdery surface dust, and started scanning the surrounding moonscape. He promptly spied the half-sunken metallic object he was looking for."
>
> "Boy, you'll never believe it! Guess what I see sitting on the side of the crater? The old surveyor!"
>
> "The old Surveyor!" Bean Echoed. "Yes, sir!"
>
> "Does that look neat!" Conrad declared, laughing with glee. "It can't be any further than six hundred feet from here. How about that?"[28]

Add to the "If that don't beat all" category in grandpaw Ben's book of hillbilly records the following NASA fact. "A few years later, after the four LEMs following Intrepid had each descended to within a few yards of their targets, ..."[29]

Golly! "Within a few yards." Don't that beat all? Sho' nuf!

[27] p. 385, APOLLO The Race to the Moon, Murray & Cox, 1989, Simon & Schuster
[28] p. 193, FOR ALL MANKIND, Hurt, 1988, Atlantic Monthly Press
[29] p. 386, APOLLO The Race to the Moon, Murray & Cox, 1989, Simon & Schuster

9 THE NUMBERS GAME

NASA has one of the best public relations (PR) departments of any agency in the country. Our taxes pay for the propaganda produced by this bureaucracy to keep us convinced at all times that NASA is 100 percent for the flag, God, science, motherhood, and the American way. The only thing they seemed to have missed in the button pushing was apple pie! And they probably claimed somewhere that space research helps make better apples. No matter what transpired over the last 35 years, in the end, NASA came out smelling like a lilac bush in bloom.

Never mind the normal disasters of incredible cost overruns. Forget the snail-like progress. Down through the years there were only two problems that really set NASA back on their heels. The first and worst was the barbecue that someone threw for Grissom, Chaffee and White. The second occurred almost 20 years later on January 28, 1986 when a few million pounds of liquid hydrogen and oxygen exploded, searing the Florida skies and destroying the Challenger Shuttle and its full crew.

Since only fools refuse to realize that in blazing new technologies there "be" hidden dragons with diamond-hard flesh-ripping teeth, the second disaster worked its way out of the public's system in short order. The Challenger explosion called for another government committee. This one was the Rogers Commission, and its job was to point the fickle finger of fate at a culpable culprit.

This turned out to be the people who made the sectional gaskets for the solid fuel rocket booster called an SRB. You may remember committee member and Nobel Prize winner Richard Feynman demonstrating on TV how the gasket material cracks when placed in a glass of ice water. The committee claimed that the cold temperatures that morning allowed the "lower" gasket to leak, thus allowing the burning rocket fuel to slice through the gasket and the joint when the burn line reached that level. Then the blazing hot gases lanced across the separation and stabbed into the cryogenic storage tank. Simple case, spectacular and deadly effect. Right? Wrong!

Collins reports that four sections comprise an SRB.[1] He also tells us, "On the other hand, the pieces of the right SRB corroborated the fact that a failure had occurred in the joint between the two lower segments — the aft field joint."[2]

[1] p. 210, LIFTOFF, Collins, 1988, Grove Press
[2] p. 225, Ibid.

In Liftoff the Collins book, on page 226, there is a very clear three-dimensional illustration, labeled "SRB joint cross-section" which shows the joint in great detail. Right next to it is a drawing of the shuttle before launch. A bold arrow starts at the joint detail and extends to the SRB's "lower" joint. He states, "The Rogers Commission interviewed more than 160 individuals and amassed 12,000 pages of transcript."[3] It is too bad they didn't look at the TV pictures of that launch that clearly showed the spear of flame emanating near the top of the SRB rocket.

As usual with government committees, their conclusion seems neither fits the facts nor the photographs. As another example, the Warren Commission told us that President Kennedy was shot from the rear, but the films taken at the time show h is head to be the only object in history that recoiled from being hit by a bullet by moving into the direction from which the bullet came. Indeed, I saw a government MD on TV declaring that living objects frequently recoil toward the bullet. That Commission apparently also pointedly ignored the fact that a bolt-action Carcano rifle, the alleged weapon of assassination, cannot be fired (period) as fast as the shots recorded on the radio sound track.

Similarly, the Rogers Commission ignored the visual evidence that everyone saw first hand. We saw, within seconds of the explosion, a magnified film clip that showed a stabbing bolt of flame lancing across the separation distance between the solid fuel booster (SSB) and main cryogenic fuel tank. It crossed the gap and vaporized the thick foam that insulates that tank, thus exposing the incredible cold metal walls to an awesomely hot flame.

In that instant, thermal stress destroyed the tanks integrity allowing the liquid fuel to escape. This, in turn, upset the balance in pressure on the tank's common diaphragm that separates the liquid hydrogen from the liquid oxygen. The diaphragm shattered allowing both liquids to mix. Yes, the flame from the booster was present, but it wasn't necessary to trigger the explosion that followed. Static electricity from the released gasses would have provided ignition in any event. That bolt of flame originated near the top of the SRB not the bottom! They would have had a much more credible supposition if they had told us it was the top joint.

The lancing flame we saw on TV originated too high up to have been a joint. It pierced the booster on a line drawn between the center of the booster and the main tank. This means that the inner ceramic liner of the booster wall was chipped (spalled) at just that point. Had it erupted from anywhere else on the perimeter it could not have hit, and therefore, eaten through the insulation to destroy the main tanks.

Although ceramic lining material is tough stuff it has one drawback: it spalls easily. You can scour and clean the porcelain (ceramic coating) on your stove forever, but don't tap it with a hammer, especially on the metal side. If you do, the porcelain will instantly spall

[3] p. 225, Ibid.

away from the metal leaving a small round section bare of ceramic covering. On a kitchen stove this is only a cosmetic problem, but in a solid fuel rocket it's disastrous. The instant the fire line hits that level the spall will fall free leaving the bare metal wall to disintegrate. Then a spear of fire, driven by the internal pressure, will leap out radially from the wall.

As I reviewed the information at hand on this disaster, I found myself wondering if someone had deliberately destroyed that shuttle. It wouldn't have been very difficult. In fact, it would have taken just one well-placed rifle bullet.

Try this conjecture on for size. Some place in this big world, there is a small group of religious fanatics that are determined to keep man out of space, because "the heavens belong to God". They could arrive in a van with a raised cap and park there, with ten thousand others, for the big lift-off. Let's assume a sharpshooter smacks a single round off the booster's edge just where a line drawn between the common centers of tank and booster would intercept. He does this after ignition, but before the hold-down latches release. The ceramic liner of the booster wall spalls. However, the spall is held in place by the solid fuel. The sound and fury of the Challenger's engines would mask a silenced rifle shot. Even a person right next to that vehicle wouldn't have heard it. That's quite a supposition, isn't it? And yet, immediately after that explosion, why were the launch facilities re-fenced to keep spectators even farther away?

The first disaster should have, and almost did, destroy NASA. However, their PR people and allied cohorts in high places were allowed to use self-inspection, stonewalling and obfuscation of the Apollo flight numbers as their way out of the barrel. It was a obvious obfuscation at that, but it worked. In fact, it worked so well that we are still a bit confused about it some twenty years after the fact.

The obfuscation of the public in general, and the press in particular, centered around NASA's renumbering of the Apollo missions. Before the fire Grissom's mission was called Apollo 1. It was touted as the first of the Apollo series.[4] When Collins writes about Grissom's flight he says, "Gus Grissom was talking about getting Apollo 1 airborne before the end of the year, ..."[5]

The fact is that every author who writes about the Moon landings also seems a bit confused about the numbering. Even Collins, the astronaut, seems confused as he reports in a huge footnote:

> "It would take bookkeeping more precise than mine to explain the various systems of nomenclature in their entirety, but the highlights are: the Grissom-Chaffee-White flight would have been called Apollo 1. It was called 204, because it was to be carried aloft by the fourth booster of the second Saturn series, the Saturn 1B. After the fire, the numbers were changed, and the Schirra flight

[4] p. 277, CARRYING THE FIRE, Collins, 1974, Ballentine Books
[5] p. 255, Ibid.

> became known as Apollo 7 because it had been preceded by six unmanned test flights. It was also still 204, since it used Grissom's booster. The Borman-Collins-Anders flight was called 503 because it was the third flight of the Saturn V, following the unmanned test flights 501 and 502. Sandwiched between Schirra and Borman was the McDivitt flight, which had so many different numbers at one time or another that I won't even attempt to list them."[6]

Then later he writes of the 012 capsule (the one that burned) as if it were now a part of the Gemini Program, "Grissom's 012 was not about to fly with the Gemini 12 shot scheduled in November, but was daily slipping farther into 1967."[7] Gemini 12 lifted on November 11, 1966 and it was the last, and official end of the Gemini Program.

Frank Borman has written this, "During 1966, NASA had conducted three unmanned flights to test the gigantic Saturn launch rocket."[8] Which flights were they? Had NASA answered such questions these doubts would have been resolved.

After the fire, without any sleight of hand, the press might have questioned why NASA was planning to send up a manned flight in an already obsolete capsule atop a Gemini Saturn using the 1B engines. Logically, wouldn't this then be another Gemini flight?

But NASA's officials used a little number magic and renamed Apollo 1 as Apollo 4. This explains the reason why one reference book refers to it as Apollo 1 and others as Apollo 4. A question that springs to mind is if that really was number Apollo 4 exactly which flights were Apollo 1, 2 and 3?

Mr. Gray also seems confused about the numbering system, but then to straighten it out he claims, "For reasons that would make sense only to a librarian, this flight was designated Apollo 7. (Apollo 1 had been set aside at the request of the widows for the flight that never took place, Apollo 2 and 3 never existed, and Apollo 4, 5, and 6 were unmanned flight tests.)"[9]

However, earlier in his book he tells us that in the spring and fall of 1966 two unmanned Apollo flights were indeed made.[10] On the other hand, didn't Frank Borman tell us there were three Apollo flights that year? See what I mean? Everybody seems to have been baffled by bullshit!

Collins reported that the first Saturn V flight was on November 9, 1967 and it was, "A nearly perfect flight, it was not only the maiden voyage of the Saturn V but..." " That test flight took place close to 9 months after the fire. It also seems to show that NASA's zero test policy was a macabre joke. And it proved that Apollo 1 was actually Apollo 1.

[6] p. 277, Ibid.
[7] p. 261, Ibid.
[8] p. 169, COUNTDOWN, Borman & Serling, 1988, Morrow
[9] p. 261, ANGLE OF ATTACK, Gray, 1992, Norton
[10] p. 211, Ibid.

As noted before, the 1B was too small to go to the Moon. Only the Saturn V could make that weighty haul, but at the time of the fire the Saturn V was still in development. For all I know it may still be in development. Bill Kaysing is positive the Saturn V never flew. Collins had this to say about the 1B rocket after the fire, "But we still had a hell of a long way to go; we weren't going to get Wally and crew airborne until summer 1968 at the earliest, and they were going on a puny Saturn IB rocket."[11] Note his accurate — for once — adjective, "puny"!

No matter how you look at it three astronauts died in a fire in an obsolete capsule on top of a rocket far too small to do the job. Why were they in there? The Apollo 7 boosted October 11, 1968 still using the 1B engine. Flight 503 flew on December 21, 1968 and Collins wrote of this flight, "502 had more than its share of problems, and had barely limped into earth orbit. The first stage had developed severe oscillations, two out of five second-stage engines had shut down, and the guidance system had overcompensated and put the vehicle into an orbit whose apogee was a hundred miles too high."[12]

Introducing even more confusion about the numbering Mr. Hurt writes the following paragraph.

> "The first series of unmanned Apollo missions, three far less ambitious earth orbital flights, were nearly catastrophic embarrassments. Apollo 4 suffered a fuel spill and a major computer malfunction. Apollo 5, the inaugural test flight of the lunar module, experienced two equally serious problems. When the hastily refurbished spacecraft finally got off the ground, the LEM's engine, which was supposed to fire for thirty-eight seconds at full power, only managed to burn for four seconds at ten percent thrust. Apollo six failed even more miserably. Due to a sequence of booster engine malfunctions, the spacecraft was catapulted into the wrong orbit before it got a chance to show its stuff."[13]

On Apollo 6 in "Journey To Tranquility' we find, "A film taken from a high-flying aircraft equipped with a radar-directed camera actually showed a piece of the rocket breaking away."[14]

And there is yet another piece of confusion, whereby the authors of the above book tell us that Collins 502 flight was in reality Apollo 6. "Yet in April, when Saturn V made its second flight, designated Apollo 6, it looked for a time as though they might have another chance."[15]

Harry Hurt writes this of the Apollo 7 which only orbited the Earth.

[11] p. 284, CARRYING THE FIRE, Collins, 1974, Ballentine Books
[12] p. 307, Ibid.
[13] p. 95, FOR ALL MANKIND, Hurt, 1988, Atlantic Monthly Press
[14] p. 226, JOURNEY TO TRANQUILITY, Young, Silcock & Dunn, 1969, Doubledav
[15] p. 225, Ibid.

> "But unbeknownst to the general public, the Apollo 7 astronauts were flirting with disaster from the moment they left the launch pad. While the mass media celebrated the fact that America had at least gotten back in the space race, NASA quietly compiled a list of no less than fifty malfunctions that had occurred during the mission. The most ominous included repeated errors by the spacecraft's guidance and control systems, inexplicable surges in orbital velocity, a nine minute communications blackout, and the loss of three days bio-medical monitoring data."[16]

Isn't it strange? Every test flight of the Apollo Program is about as bad as it can get, yet for the next nine in a row, most problems disappear.

Still confused? So am I. In desperation I sent a letter to NASA asking for a complete listing of every launching for the three space programs. I am still waiting for an answer. Why didn't I get a response listing the launchings, if they weren't playing a numbers game? Surely, they couldn't be confused too.

[16] p. 96, FOR ALL MANKIND, Hurt, 1988, Atlantic Monthly Press

10 EXPLAINING HEAT & COLD

The single greatest misconception we have about space is that it is cold. NASA, that great science machine, has never done a single thing to dispel this great myth. If anything they have promulgated this myth for their own advantage. Even though one definition of cold is the absence of heat, space is an absolute exception to this rule.

As a kid reading thousands of science fiction stories I would find a repeated situation similar to this, "Jay Vordak was in serious trouble. He had been able to extract the Krentak Ray generator from the vault on the Vulsa ship but the vault guard robot had smashed his suit heater in the last seconds of the fight. It was as dead as the robot. The ray would save his people from being enslaved by the Vulsa only if, in the next few minutes, he could reach his ship hidden amongst the huge boulders on this barren rocky asteroid. He could feel the bone numbing cold of space rapidly sucking the heat from his body."

Until I began to write this book I never realized that space is neither cold nor hot. Only matter can have these attributes and space is the absence of matter. Science claims that heat is a measurement of molecular activity. Since there are very few atoms or molecules to be agitated in space, space can neither be hot nor cold. As a near perfect vacuum, it is, at the same time, the greatest insulator and the best heat sink in the universe. It exists, unaffected, next to the incredibly hot surfaces of stars. It remains just as completely unaffected near the absolute zero temperatures found on comets traveling through interstellar space.

Before we can understand what happens on a space ship, or to a space suit, we need to understand a bit about heat. This section is a little refresher course for those who once knew a lot about heat, and a beginner's course for those who only know that ice is cold and a fire is hot.

Temperature — The measurement of the molecular activity in a mass; the sensible heat energy in a substance.

Heat is measured in degrees by various temperature scales. Despite an act-of-Congress many years ago that demanded we adopt the metric system and use the Celsius (C) temperature scale, most Americans still subconsciously think in terms of Fahrenheit (F) temperatures, and also in the English system of weights and measures. We cling to it, not because it is superior, but because we were brought up using it and we can instantly visualize its various units.

We know an ounce of weight; a mile of distance and a degree of Fahrenheit temperature. We Americans do not yet think in terms of grams, kilometers nor degrees Celsius. The Fahrenheit scale places the freezing point of water at 32° F and the boiling point at 212° F. This scale is awkward and admittedly hard to calculate with, but we've used it from our earliest schooling, and in this case familiarity breeds ease of use.

The Celsius scale calls the freezing point of water zero and the boiling point 100°C. It is simple for those brought up using it, but confusing to those of us who weren't.

There is also the Kelvin scale (K) which uses the Celsius degree and calls minus 273° C absolute zero. For the purposes of easy reading and comprehension I shall use degrees Fahrenheit for our discussion. However, for heat calculations concerning radiant energy it is necessary to use the Kelvin scale. Here is a table showing a short range of every day Fahrenheit temperatures and their Celsius and Kelvin equivalents.

Fahrenheit to Celsius to Kelvin									
F	59.0	64.4	69.8	75.2	80.6	84.2	89.6	95.0	100.4
C	15	18	21	24	27	30	33	35	38
K	288	291	294	297	300	303	306	308	311

Heat Conduction — The process by which molecules transfer heat energy to another molecule.

All materials conduct heat. But metals are much better heat conductors than non-metals. Liquids are much better conductors than gasses. Flowing substances conduct heat much better than their stationary counterparts. Most organic substances are poor conductors of heat, and a vacuum is the worst heat conductor of all.

Insulation — Any material that is a poor conductor of heat.

The best insulating materials only slow the conduction of heat. A man in a modern fire fighter's suit can walk bravely into the flames surrounding a burning oil well and survive. However, he will survive only as long as hoses keep spraying him with cooling water to remove the heat. Should the water pump fail he has only seconds before he is parboiled and minutes before he is cremated, despite the suit.

A vacuum is the best insulator because it is composed of nothing. Being nothing it has few molecules or atoms to agitate, and therefore, cannot transfer heat by conduction or convection. The best known application of this fact is the Dewar flask used in cryogenic work or its household relative, the common glass thermos bottle.

The principle of a thermos is simple. The inner section is composed of a narrow necked ultra thin glass-walled bottle fixed within a slightly larger ultra thin glass-walled bottle.

The bottles are hermetically sealed together after the air between their adjacent walls is evacuated by vacuum pump.

To reduce the heat loss even further the outer and inner surfaces are mirrored. This stops some of the radiant heat loss because it is reflected back and forth by the mirrors. A cork is used as a stopper in the opening, because, in addition to the ease with which it compresses to make a tight seal, cork is also a very good insulator. In fact, cork was one of the best heat insulating materials before space-age materials became available. This entire assembly was usually placed in a steel case and covered with a removable cup that threaded onto the main case. A good thermos can hold either boiling hot beverages or ice cold drinks, and can almost maintain the starting temperature for hours depending on the ambient temperature of the environment.

Radiant Heat — Heat energy transferred by an electromagnetic wave.

The only way heat energy can be transferred through a vacuum is by radiation. The Stefan-Bolzmann law is used to calculate the quantity of heat being radiated, or received, by a substance.[1]

The radiant heat transmitted from a unit area of surface is proportional to, and thereby mostly dependent on the fourth power of the absolute (Kelvin) temperature of that surface. The words "fourth power" sound complicated, but they simply mean multiplying a number by itself four times. For example the fourth power of 2 is 2 * 2 * 2 * 2 which equals 16. The fourth power of 3 is 81. The number 3 is only 1.5 times greater than 2.[2] However, if we divide the fourth power of 3 by the fourth power of 2 we find it is 5 times as great.[3] Therefore, a body radiating heat at 3 degrees K radiates five times as much heat as a body at 2 degrees K. This ratio drops quickly as the numbers increase.

The heat emitted is also dependent upon the coefficient of emissivity. This is a number which ranges from zero to one. A perfect emitter would be 1 and the perfect mirror would be 0 because it would reflect all the heat that hit it. It doesn't matter if the surface is emitting or absorbing radiant heat the coefficient is the same.

A constant, called Stefan's constant, is also necessary to produce numerically correct answers. The Stefan-Bolzmann formula produces numerical answers in watts. It can converted to calories, a heat unit we're more familiar with, by multiplying the watts by 860.

The Sun's surface temperature is estimated at 6000° K.[4] The radiant energy at this extremely high temperature is truly awesome. By using Stefan-Bolzmann's law we find that 73,487,090 watts per-square-meter is transmitted into space. After it has traveled 93

[1] Stefan-Bolzmann's Formulae I (watts) $= eaAK^4$, with e = emissivity coefficient = .5, a = Stefan's constant = 5.6703 10^{-8}, A = area in square meters, K = temperature in Kelvin.
[2] 3/2= 1.5
[3] 81/16 = 5.0625
[4] p. 316, COLLEGE PHYSICS, "Tipler", 1987, Worth Publishers, Inc.

million miles to the Earth, this figure has been reduced to an average of 1353 watts per square meter above the atmosphere.[5]

Boiling — The vaporizing of a liquid by the addition of heat.

When we boil any liquid we produce a vapor of that liquid. In addition to the sensible heat (detected by a thermometer), each gram of vapor carries with it a much greater amount of non-sensible heat which is called the Heat-of-Vaporization. If the vapor is physically removed from the area the remaining liquid becomes cooler. The temperature at which a liquid boils is also varied to a great degree by the pressure. On top of a mountain where the atmospheric pressure is less, water boils at much lower temperatures. The freezing point of a liquid is also affected by pressure in a similar manner, but to a much lesser degree.

A tumbler of water will start to boil away without added heat as you increase the vacuum. In fact, if you had a thermometer in the tumbler, you would see the temperature of the remaining liquid drop as the vapor was pumped out. At a low enough pressure or a high enough vacuum you would also see some of the water turning into ice at the same time the rest was boiling. In effect, the remaining water is being refrigerated by the heat energy it is losing. Once boiling commences the pressure will drop much more slowly than in the beginning. The lower the pressure the harder the pump must work. Since each volume of water vapor is 1200-times greater than the water so vaporized, the pump must evacuate that much more volume.

If you didn't realize that you were removing heat by extracting the vapor you might conclude that a vacuum is inherently cold. Indeed, science fiction books, sci-fi movies, and television space operas have led us to exactly that conclusion. But this is not true. If space was as cold as we have been led to believe then any surface area of a space ship away from the heated sections could become dangerously weak and susceptible to failure. Too much cold, like too much heat, can seriously affect the structural integrity of most materials. During both the Arctic and the Antarctic winter, temperatures can drop below minus 60° F. Rubber loses much of its flexibility and metals become brittle. But this temperature, -51° C or 222° K, is relatively hot compared to absolute zero at -273° C.

Refrigeration — A process which cools a substance by the physical removal of heat.

Mechanical refrigeration uses a lot of power, heavy motors, pumps and a refrigerant to pump heat out of a well insulated container. The refrigerant must be able to store the heat it absorbs from the container and must also be capable of releasing that heat in the heat exchanger. Some type of pump is needed to move the hot refrigerant from the container to the heat exchanger and then bring the cool refrigerant back again.

The heat exchanger is vital because it transfers the heat to a heat sink which on Earth is either the air of our atmosphere or sometimes the water of a pond, river or ocean. Without

[5] p. 316, Ibid.

a place to dump the heat there would be no refrigeration or air conditioning as we know them. If you ran an air conditioner in a sealed room the temperature in the room would climb even though directly in front of the machine there would be a flow of colder air.

Explosive Freezing — The rapid decompression of a liquid or a gas.

In a CO2 extinguisher, carbon dioxide, a colorless gas is stored under high pressure in a liquid state. When we pull the trigger the liquid, released from the pressure, rushes out into the air instantly exploding into a fine spray of extremely cold and frozen particles called dry ice. The latent heat is lost because of the tremendous change (drop) in pressure.

Fuel Cells — A generator that combines a fuel and oxygen, and primarily produces DC electricity and water instead of heat.

These units are similar to batteries. However, unlike a battery — which uses a chemical change to store electrical energy — a fuel cell uses a chemical process to generate relatively small amounts of electricity. Also, unlike batteries the fuel (chemicals) are not stored internally, but are fed in as the electricity is needed.

Spontaneous Combustion — A process where oxidation creates more heat than is being emitted.

The temperature will rise in a closed system (house, car, or LEM) when more heat is absorbed than given off. As you will see, a space ship or space suit is no different. In summation, if a vacuum was inherently cold we could air-condition and refrigerate simply by putting a vacuum chamber around the unit's radiator and then pulling a vacuum on it.

11 THE LEM'S PROBLEMS

11.1 Thermal Problems

At the start of the Apollo Program, Joe Shea, NASA's Chief Administrator, decided the Apollo capsules should rotate about their longitudinal axis to keep the heat shield warm enough not to crack on re-entry. They called this passive thermal control or PTC. Since the heat shield was covered by the service module until minutes before re-entry, what are they talking about?

Of itself, the rotation could neither heat the ship nor cool it. Maybe you've had the same experience, when you roast a whole chicken on a grill. It doesn't matter whether the skewered chicken is rotated 5 times an hour, or 50 times an hour. The chicken cooks in exactly the same length of time. The only thing that turning on a spit accomplishes is to cook the meat evenly.

On a space ship, axial rotation would distribute solar heat evenly, allowing the sun-side and shade-side hull temperatures to be fairly equal, as long as the ship wasn't pointed directly at, or away, from the Sun. But it would also greatly complicate the navigation. Not that the roll itself would be hard to compensate for, but at the time the IMU (Inertial Measuring Unit) and its associated computer would have had to cope with more than one set of problems at a time. This was when computer memory was small and computer operating speeds were much slower.

Indeed, Borman speaks of this twisting mode and says, "We were using passive thermal control (PTC), which involved turning Apollo 8 on its long axis facing the sun and then doing a slow roll."[1]

Here is a man who earned a Masters in Engineering from California Institute of Technology and went on to teach thermodynamics at West Point. Yet, he seems ignorant of the fact that once the long axis (nose or tail) is pointed at the Sun the heat absorption is at a minimum, so that the entire sun-side of the surface will be evenly heated. Why would anyone bother to rotate the ship once it pointed at the Sun?

It took the Apollo ships about 90-hours to travel to the Moon and almost as long to return to Earth. During these periods of time NASA claimed both capsule and service module

[1] p. 205, COUNTDOWN, Borman & Serling, 1988, Morrow

were air-conditioned using power from the service modules fuel cells and other equipment mounted there. To evaluate this system would require that NASA supply technical information about those systems, which unfortunately they will not give.

Nonetheless, we don't have such a problem with the awkward, unbalanced, Lunar Landing Module (LEM). This pile of tin was so fragile it couldn't support itself here on Earth, and exploded whenever tested in our atmosphere. It had a perfect record of disaster until it was used on the Moon. Then, eight times in a row, it worked perfectly every time by landing safely on the Moon's sunny surface.

The Moon has a two week day and a two week night. The first mission (Apollo 11), set down when the Sun was only 10° above the horizon ostensibly to avoid the heat of the noonday Sun. Later, Apollo landings took place later in the lunar day. And to add to the heat problem all the landings were within twenty degrees of the lunar equator.

Mr. Noble has this to say about temperatures on the Moon. "Surface temperatures range from about 243 degrees above zero Fahrenheit in the unfiltered sunlight at lunar midday, to about 279 degrees below zero in the depths of the lunar night..."[2] The figure must be substantially correct. If it wasn't, wouldn't the astronauts have reported it? This is hotter than boiling water. In fact, this is hotter than the pressurized water in most household hot water heaters and boilers.

Yet, over and over again, NASA preaches the "cold of space" doctrine. When Aldrin and Armstrong were sleeping on the Moon during the Apollo 11 mission, Harry Hurt wrote:

> "Aldrin tried to curl up on the floor of the LEM, only to discover that he was too "Elated" and also too "cold" to sleep during the astronauts schedule seven-hour rest period before lunar take-off As he reported afterward, "The thing which really kept us awake was the temperature. It was very chilly in there. After about three hours it became unbearable. We had the liquid cooling system in operation in our suits, of course, and we tried to get comfortable by turning the water circulation down to a minimum. That didn't help much. We turned the temperature control on our oxygen system up to the maximum. That didn't have much effect either. We could have raised the window shades and let the light in to warm us, but that would have destroyed any remaining possibility of sleeping.""[3]

Did NASA fail to make a system that could be turned off? Despite Aldrin's reported claim, the suit's cooling system cannot work in a pressurized cabin as we will see in the next section. In his book, all Aldrin has to say about that day is, "We didn't sleep much at all. Among other things, we were elated — and also cold."[4] All of this seems very mysterious

[2] p. 272, WE REACH THE MOON, Wilford, 1969, Bantam Books
[3] p. 185, FOR ALL MANKIND, Hurt, 1988, Atlantic Monthly Press
[4] p. 239, RETURN TO EARTH, Aldrin, 1973, Random House

since all the Moon landings took place during the lunar day. That's when the surface of the Moon is literally as hot as hell. If it's 273° F at midday wouldn't the surface be at least 200° F when the Sun is at 10°? Remember, on the Moon, the sun has been rising for over 24 Earth-hours to get that high.

Isn't it reasonable to assume that the Sun will heat every object on the Moon's surface to roughly the same temperature? Does the Sun not heat cars, houses and pavements here on Earth? Have you ever picked up a metal tool left lying in the summer sun? It can raise blisters on your hand if you're no wearing a glove. Is the sunlight on the Moon different than that on Earth? Yes it is! In fact, it's more intense, since it isn't diffused by an atmosphere as on Earth. That's why noonday temperatures are hotter than here. With the Sun beating down on the LEM how could it have been cold inside?

And as far as not being able to sleep in the sunlight, only vampires have that problem. Normal people often fall asleep on sand beaches and lawn chairs. Isn't that why God made eyelids, or why man created sunlasses and eye-masks?

When speaking about wearing a space suit Collins had this to say, "the astronaut would dissolve in a pool of sweat were there not some way to keep him cooled..."[5] Undoubtedly he was speaking about a conditioned internal environment. Doesn't that mean the suits acted as insulation? Of course they did.

Obviously this entire story was scripted by the NASA "space opry" writers trying to obfuscate the fact that NASA claims that the LEM's cooling system could only cool the electronics. That system, if it ever existed, operated on batteries. Yet, there was no way to power the additional drain of an air conditioning system, had it been present. Murray & Cox writes this: "Because the LEM used batteries instead of fuel cells, oxygen didn't figure in the calculations about power supplies."[6] Thinking about it, electronic equipment turns almost all the input power into heat. I don't believe the LEM system as described could ever cool that.

During the Apollo 13 mission NASA tells us about an explosion in an oxygen tank which bled out the other tanks and thereby depriving the fuel cells of the needed oxidizer. This left the astronauts totally dependent upon the LEM's batteries. As Murray and Cox report, "Bit by bit, the Lent was powered down to 15 amps per hour, and the astronauts, wearing thin clothing designed for a long trip in a confined space at 70 degrees, began to get cold as the temperature dropped below 60 degrees and kept going down."[7]

A prelude to this exciting story occurred on the Gemini 5 mission launched August 21, 1965. With astronauts Pete Conrad and Gordon Cooper on board, the fuel cells had an oxygen pressure reduction that went from 800 down to 120-psi. They powered down

[5] p. 116, CARRYING THE FIRE, Collins, 1974, Ballentine Books
[6] p. 426, APOLLO The Race to the Moon, Murray & Cox, 1989, Simon & Schuster
[7] p. 428, Ibid.

which meant they turned off the capsule's air conditioner. It fell to 55-psi on the next orbit and then, "The miracle happened: the pressure began to stabilize, though at a very low level."[8]

It was later determined that the fuel cell heaters had failed and then the Sun's radiant heat had begun to warm the cells. Wasn't the Sun shining for the first 3 orbits? On that same page we find Cooper and Conrad complaining to ground control, that it was still too cold in the capsule. "We've been sitting here shivering for the last few hours."

During Gemini 7, Frank Borman, complained that the suit was too warm and that, "The cabin remained warmer than we wanted..."[9] This was after they had turned down the cabin heat to as low a setting as possible. First question, why didn't Borman, the man who taught thermodynamics, insist on a simple on/off switch to the heat? Have you ever seen a vehicle where it was impossible to turn off the heat? The heat certainly had to be electrical. Why wasn't there a simple switch?

Second question, why didn't NASA use common thermostats such as we use in houses and cars? Third question, how could this capsule get so warm when it spent half its time in the Earth's shadow while the Apollo 13 got so cold spending all its time in the direct sunlight?

Let's review what NASA claims:

1. On the pad, the entire ship is air-conditioned by conventional air-conditioning powered from the ground at Kennedy.

2. The entire ship is air-conditioned in space, powered by fuel cells, until you lose power to run the air-conditioning system because the Sun is heating the whole ship.

3. Because you turned off the air-conditioner the ship gets colder.

4. The LEM had no air conditioning so it got even colder.

The lesson to be learned here is that the next time your air-conditioner is losing the battle with a summer heat wave you can make the house cooler by turning it off. All you have to watch out for then, according to NASA, is getting too cold if the heat wave persists. Conversely, if you feel cold next winter turn off the heat and open the windows. Makes sense in a NASA sort of way.

In the same way that the morning sun quickly warms the Earth's surface, the Sun on the Moon would heat anything parked there. We can calculate the temperature of the LEM after a few hours by adding up all the heat entering, and subtracting all the heat being emitted. The incoming heat was dependent on the heat radiated by the Sun, which

[8] p. 96, HEROES IN SPACE, Bond, 1987, Basil Blackwell Inc.
[9] p. 136, COUNTDOWN, Borman & Serling, 1988, Morrow

is added to by the astronauts' body heat, and by the heat loss into the cabin from all the electronic gear.

Since NASA has never answered any of my letters asking clarifying questions about the equipment used on the Apollo missions, I must make a few assumptions before using the Stephan-Boltzmann law of radiant heat to establish the temperature of a LEM parked in the Sun on the Moon's surface.

The first data requires that we calculate the heat from all sources. I have chosen an emissivity factor of .5 simply because that lies halfway between a perfect mirror and a perfect black body. The Sun impinges on the walls of the LEM with 1353-watts of solar radiation per square meter on the module's Sun side surface.[10] Therefore the available heat absorbed is 676-watts per-square-meter.[11]

We need to know the silhouetted area so I've assumed a diameter of 16 feet. This comes to 201 feet square or 18 square meters. Therefore, the total solar heat amounts to 12,168 watts per hour.[12]

The life processes of a normal human maintains a body temperature by generating 111 watts.[13] Two astronauts on board adds 222 watts to the total. This is a grand total of 12,390 watts of input heat.[14] If the LEM is not to become a sweltering death trap it must shed most of that heat which, in the absence of air conditioning, can only be done by radiant heat transmission. The emissivity factor is the same coefficient as used for absorption.

The easiest way to determine the answer is to find the temperature at which the LEM would radiate 12,390 watts from its shadow half. We must transpose the Stefan-Bolzmann formula to find that temperature.[15] Before the LEM can radiate heat equal to the heat it is gaining, its temperature would climb to 120° C or 248° F.[16] Since this calculation is very close to the astronomers' assessment of the Moon's surface I consider it to be basically correct. Did I miss something? How can a vehicle that starts out warm enough to survive in, become too cold to sleep in while parked in the blazing Sun?

The LEM stayed on the Moon for over 24 hours and during this time NASA tells us that our intrepid astronauts used it to sleep, rest, eat, and to eliminate waste in, when they weren't outside on the Moon's surface. By the time the program called for them to leave, the LEM had to be hotter than the ground. Yet our audacious astronauts calmly climbed

[10] p. 316, COLLEGE PHYSICS, Tipler, 1987, Worth Publishers, Inc.
[11] 1353 watts * .5 = 676.5 watts per meter square
[12] 676 watts per square meter * 18 square meters = 12,168 watts
[13] p. 312, COLLEGE PHYSICS, Tipler, 1987 , Worth Publishers, Inc.
[14] 12,168 watts + 222 = 12,390 watts
[15] $K^4 = I/Aea$
[16] K^4 = 12,390 / (18 * .5 * 5.673 10^{-8}), $K^4 = 2.3810$, $K = 394$ K or 120 C or 248 F

the ladder and crawled inside to begin the trip back home. It must have taken a special kind of courage to crawl back into that oven. They really did have "The Right Stuff!"

If space is cold, why did they put radiators on the service module to not only cool that module but also to cool the command capsule? Surely there can't be different climatic zones out in space, one for close Earth orbit space and another for lunar space. If it was so cold why weren't unit heaters provided. After all, one of the first specs for the Apollo series of ships was that, "It would provide a shirt-sleeve environment."[17]

Aldrin space-walked on the Gemini 12. "While he was working outside on a daylight pass above the world, he could feel the strong heat of sunlight against the rear inner wall of the inflated suit, he almost burned his skin before he leaned forward again. An external zipper was located in that area and its metal parts had become intensely hot from absorbing solar radiation."[18]

Each complete Earth orbit constituted a "day" which is defined here as the time between the rising of two consecutive Suns. However, since the capsule orbited in about eighty minutes, this was a "day" which gave only about 40 minutes of daylight. In that 40 minutes his metallic zipper became hot enough to burn his back. But the metallic LEM of Apollo 11 fame, which stood on the Moon for almost 12 hours did not! In succeeding missions the LEMs were exposed for days. Yet, they did not heat up. Are the Sun's rays weaker on the Moon? Is space colder on the Moon?

NASA never quits trying to make us believe that space is cold. But they're wrong, because space is nothing! It is the Sun's radiation which causes heat. The LEM should have roasted our celluloid heroes soon after they landed, and long before they could blast off to make rendezvous with the command ship.

Murray & Cox wrote that Houston control was worried about the cold messing up the IMU and thereby losing its one hundredth of a degree angular accuracy. "His back room was posing the hair-raising possibility that if they turned off the command module's guidance system and let it sit in the cold"[19] — Go figure!

If the cold of space can cool a ship, why did authors Murray & Cox write as follows after interviewing NASA experts? "In contrast, water was a huge problem. The electronics in the spacecraft generated heat which was carried off by glycol circulating through the system. The warmed glycol was chilled by running it through tubes encased in ice. The ice was made by the cold of space from water supplied by the LEM. As the glycol ran through the pipes, the ice vaporized and boiled away."[20]

[17] p. 97, JOURNEY TO TRANQUILITY, Young, Silcock & Dunn, 1969, Simon & Schuster
[18] p. 215, SUITING UP FOR SPACE, Mallan, 1971, John Day Co.
[19] p. 414, APOLLO The Race to the Moon, Murray & Cox, 1989, Simon & Schuster
[20] p. 426, Ibid.

Here these writers were told that NASA was worried about not being able to run the cooling system. But then we are told that Houston was worried about the cold disabling the IMU. That is not logical! The statements are diametrically opposed.

It wasn't the cold of space that made the ejected water turn into ice, it was the fact that space is an infinite heat sink. As we have seen, the heat from the electronic equipment is only a very small portion of the heat that had to be removed. The command ship should also get warmer every minute it spent in the Sun. How much water would the radiators have consumed to keep the ship cool during these two week trips in the Sun?

Collins asked this question in his first book, "What would the temperature be inside the spacecraft during the constant sunlight on the way to the Moon? With the sunny side baking and the shady side freezing, what would equilibrium conditions there be inside, where the softies lived?[21]

I'd like to address a few words directly to Mike Collins. "Mike, after reading your book three times I think I've earned the right to be informal. Your book was published after the Apollo 11 segment of the grand ol space opry was aired. Since you don't seem to remember how it really was, I would like to be helpful and remind you what it was really like. The advice is free, and I hope you will accept it in the same generous spirit in which it is given. After all, Mike, NASA may decide to re-activate your commission for the trip to Mars. Star Fleet Command did it to the fictional, Captain Kirk, and it could happen to you.

Mike, the inside of that ship will be just as hot as it was during the Apollo missions. And that was damn hot. I advise that next time you go to the Moon that you drink a lot of water, take a lot of those funny little salt pills and shower frequently. That way you will avoid the heat exhaustion you must have suffered the last time out.

Next problem. Let us return to May 1973 when a revamped Saturn V rocket carcass called Skylab was launched. The huge solar collector panels, designed to deploy from both sides of Skylab like diametrically opposed dorsal fins, failed during their planned extension. Eventually the hardy souls on board discovered that the micro-meteorite shield was carried away during launch, and ripped away one huge panel while it pinned down the second. How one shield (never described) could attack both sides of a ship still puzzles me.

Skylab's orbit was 250 miles high. Just before the 3 hour mark after the launch, "the environmental systems officer was swamped with information he never expected to see. Temperatures were all wrong, fluctuating wildly, but for the most part going in just one direction — up!"[22]

This man, a contemporary of Aldrin, Collins and Armstrong, must have believed that space was cold; so cold that no plans had been made to use the great Joe Shea's thermal

[21] p. 64, CARRYING THE FIRE, Collins, 1974, Ballentine Books
[22] p. 474, MANNED SPACE FLIGHT, Baker, 1981, Crown

roll. Remember, just a few short years before how Houston Control had made the go-no-go landing decisions for each of the LEM's as they descended to the Moon? Obviously such a decision was not left to the astronauts presumably flying the machine. NASA accomplished this miracle of modern telemetry despite a 2.5 second radio transmission loop caused by the 240,000 miles of distance?

Well, they must have fired all those old geniuses and hocked that equipment because this time, with Skylab at a range of 1,000-miles, nothing worked. Baker writes, "Toward the end of revolution 4 the Honeysuckle tracking antenna picked up attitude changes which took Skylab away from solar-inertial mode, causing the four ATM arrays to drift off their lock on the Sun. By the time Hawaii relayed telemetry from Skylab, the cluster had corrected itself."[23]

The manned flight planned for the following day was cancelled. There was another NASA cliff-hanger in progress. If they aimed the solar collectors at the Sun, Skylab heated. If they shielded the ship by placing the rear end toward the sun they had little electrical power.

The whole problem could have been resolved in the planning stage if the designers had been told that space isn't cold. This way they could have designed the fin-like collectors to rotate 90°. Then the ship could have been pointed at or away from the Sun to control the heat while still collecting full electric power from the collectors.

By revolution 12 (about 12 hours after launch) the controllers were reading an interior temperature of 38° C (100° F) and a hull temperature of 82° C (179° F). It was also predicted that, "Temperature problems would become acute this day."[24] When launched the normal pressure inside Skylab had been intentionally vented to prevent the shell from bursting, then resealed when the pressure hit 58 mm-Hg (1.1-psi). They were supposed to begin pressurization with oxygen to 225 mm-Hg (4.3-psi) in preparation for receiving the astronauts.[25] But plans for all this were halted because the pressure induced by the extreme temperatures might have burst the hull .

I find this info a bit hard to believe. What does seem clear is that high temperature in a 70 % oxygen atmosphere could start another oxygen fire such as the one on Pad 34 that cremated Grissom-Chaffee & White.

Later that day the exterior sun-side hull temperature was 146° C (295° F) and directly inside the hull they were 49° C (120° F). On the exterior shade-side the hull temperature was 32° C (90° F) and inside that wall it was 21° C (70° F).[26] Assuming both sides had the same insulation, I cannot understand why there was a through-the-wall temperature differential of 175° F on one side, but only 20° F on the other.

[23] p. 475, Ibid.
[24] p. 476, Ibid.
[25] p. 476, Ibid.
[26] p. 476, Ibid.

Since Baker shows it's colder inside, than outside on the shade-side I must assume that he made a mistake and reversed these numbers. That is if there was ever any truth to any of these figures.

That's when they allegedly began to figure out how to jury-rig a sunshade that could be deployed by Pete Conrad and his merry men when they arrived on the scene. In the meantime they played attitude games with the machine to limit the heat rise. The following morning, however, hull temperatures rose to higher than 148° C (298° F) despite all the attitude manipulations.[27]

What was never really mentioned or clarified by the author is the fact that, unlike the Apollo command ships and the LEMs, that Skylab spent half its time in the shadow of the Earth soaking up zero rays. Isn't space just as cold close to Earth? By late afternoon Wednesday (that same day) the internal temperature peaked at 51° C (120° F) and then began to drop slowly.

Is this another NASA joke? If it's not a joke then it is another NASA fabrication. Collins has this to say, "Without the shield as a sunshade, the temperature inside the workshop gradually worked its way up to 150 F."[28]

In the meantime Houston control feared that the high temperatures had contaminated the existing atmosphere with carbon monoxide and that toluene diisocyanate was released from the materials inside.[29] They feared the lab would have to be purged many times to clear out the toxic fumes.[30]

Since the rate gyroscopes (IMU devices) had failed, NASA's geniuses figured out how to tell the precise attitude from the temperature readings. At least that's what they told Baker. He writes, "For the past day or so, information from the rate gyroscopes on Skylab's precise attitude had become less and less reliable since they had not been updated by the Sun sensors locking on the solar disc and gradual drift carried them out of the precise calibration they had at the start of the mission. So controllers, who by now had developed a very precise knowledge of the effect minute attitude changes, had on the internal and external temperature, mapped the changing profile, observing fractional increase or decrease in temperature, to tell the guidance controllers the precise attitude of Skylab."[31]

This story is on the same level as that of Emil Schiesser and the doppler readings of the radio transmissions of Apollo 11 after which he knew exactly where that ship was. This, to my mind, is just as hard to believe as that tall tale.

On May 27, our space heroes finally boarded Skylab and deployed the parasol. Not, we are assured, without a terrible struggle. But since one tends to grow weary of NASA sagas

[27] p. 477, Ibid.
[28] p. 175, LIFTOFF, Collins, 1988, Grove Press
[29] p. 476, MANNED SPACE FLIGHT, Baker, 1981, Crown
[30] p. 479, Ibid.
[31] p. 480, Ibid.

lets move on. With the umbrella up the internal temperatures dropped to 46 °C (115° F) and the astronauts reportedly went to sleep in Skylab.[32] Have you ever tried to sleep when it was 100° F, let alone 115? Pete Conrad and his boys really played it cool. They had "The Right Stuff!"

The next morning the temperature was down to a comparatively chilly 42° C (107.6° F) and they began regular operations. It finally dawned on me that the inclination of an orbit determines the percentage of time the ship spends in the Sun, because our poles are inclined 21.5° to the path of our revolution. Therefore a ship with an inclination of 21.5° South would spend 50 % of its time in the Sun. If that inclination was 68.5° North then it would spend all of its time in the Sun. The Skylab, in its 50° North inclination would spend 80 % of its time in the Sun.

It strikes me as strange that Skylab, composed of the same materials as the Apollo 13 capsule, overheated while that Apollo capsule which spent all its time in the Sun, became ice cold. Remember that, according to NASA, the 6 LEMs that stood on the broiling lunar surface for days on end, without air-conditioning, also became cold.

A ship heading toward the "new" Moon is 240,000 miles closer to the Sun. Are we to conclude that the Sun's heat diminishes the closer you get? Or can it be that the Van Allen belts sort of gather up the radiation and also concentrate the Sun's heat?

11.2 Loading

To reduce the weight of the Apollo 11 capsule, NASA was reduced to scraping away Mylar insulation. This play paid off because it enabled the intrepid, Neil Armstrong to jink sideways a hundred yards and safely land on the last of his fuel. ""Thirty seconds," says Houston. That's how much fuel they have left. Better get it on the ground, Neil.""[33]

It seems logical to me, that if the Lem could have carried more fuel, NASA would have enlarged the fuel tanks instead of scraping Mylar? As shown by the following set of charts, the Moon's gravity was as expected, or lower. It couldn't have been stronger because each mission added more scientific equipment for the ALSEP science tests. The series of four charts below labeled figure "a" through "d" respectively, can be found on page 2-2 in a 1973 NASA publication entitled APOLLO 17 Preliminary Science Report.

[32] p. 487, Ibid.
[33] p. 406, Ibid.

MISSION DATA ON WEIGHT, TIME OUTSIDE LEM AND DISTANCE TRAVERSED							
Mission	Traverse Distance		Time Spent	Experimental Equipment		Samples Retrieved	
	km	mi	Outside (hr)	kg	lb	kg	lb
Apollo 11	0.2	0.1	2:24	102	225	21	46
Apollo 12	2.0	1.2	7:29	166	366	34	75
Apollo 14	3.3	2.0	9:23	209	460	43	95
Apollo 15	27.9	17.3	18:33	550	1212	77	170
Apollo 16	27.0	16.7	20:12	563	1241	94	207
Apollo 17	35.0	21.7	22:05	514	1131	110	243

If we compare the weight carried by Apollo 11 to that of Apollo 16 we find an increase in weight of 1016 pounds.[34] The chart says very clearly that the load from the extra equipment represented only scientific experimental equipment for the ALSEP experiments. But please note, I find no reason to consider the Rover as experimental equipment. The Rover weighed 460 pounds[35] bringing the total increase in weight to 1476 pounds.[36]

If an 80 pound back pack life support system (PLSS) lasted each astronaut for four hours, as NASA's claims, then they had to carry either eight more units or re-fills on the Apollo 16 mission. That is an additional load of up to 640 pounds, bringing us to a possible maximum of 2116-pounds additional weight on the descending LEM.[37] I cannot begin to guess how much additional "landing" fuel this much extra weight would require even if we suppose that nothing else had to be added to extend the total time spent on the Moon. This added mass is over a ton. All I can say is they must have scraped off an awful lot of Mylar!

11.3 Solar Radiation

This may be the proper place to speak of the extra deadly radiation that is emitted by solar flares. Collins seems to have fluffed off this problem when he wrote, "In similar fashion, the Van Allen Radiation belts around the earth and the possibility of solar flares require understanding and planning to avoid exposing the crew to an excessive dose of radioactivity."[38]

If NASA had so much understanding of solar flares why did they send Apollo 8, 10, 11, and 12 out just when, as was known to any astronomer that the sunspot cycle with

[34] 1241 - 225 = 1016 pounds
[35] p. 95, VOYAGE THROUGH THE UNIVERSE - OUTBOUND, 1991, Time-Life
[36] 1016 + 460 = 1476 pounds
[37] 1476 + 640 = 2116
[38] p. 101, CARRYING THE FIRE, Collins, 1974, Ballentine Books

maximum flare activity was reaching its peak? Why did they continue the missions over the next two years as that peak slowly declined? If those vaunted 7 million dollar space suits were any protection against that degree of radioactivity, the atomic core that melted down the pile in TMI(Three Mile Island) could have been removed by now, instead of continuing to tick away like an atomic time bomb.

Collectively all our astronauts spent about 90 days in space during the Apollo years. Since the radiation from the completely unpredictable solar flares travels to the Earth or Moon in less than 15 minutes, not much could have been done about avoiding a flare unless you carried lead coffins to hide in. But then if you had the rocket power to add all that weight you surely wouldn't have spaced out in paper thin hulls, a 5 psi pure oxygen atmosphere, nor scraped Mylar from the LEM to reduce its weight.

Later, in this book you'll see NOAA's records of the solar flares for those months the Apollo crews were in space; far beyond the protection of the Van Allen belts. When you do, I feel sure you'll agree they should have received enough solar flare radiation to constitute a fatal dose. Parenthetically, years before the Apollo missions a camera satellite called "Big Bird", orbiting below the Van Allan shield, used gold canisters to protect the film from fogging due to solar radiation. Apparently our astronauts were more than golden.

12 BLOWHOLES OF SEA & SPACE

Blowholes — A nostril at the highest point in the head of cetaceans. A vent to permit the escape of a gas.

A hungry whale descends into the black depths of one of Earth's oceans to feed. When the oxygen stored in the whale's body begins to run out, the whale surfaces and explosively discharges the used air and expired water vapor from its blowhole. The exhaled gases, at the whale's body temperature, are rich in water vapor. When vented they form a mist upon contact with the colder air over the water. This is called a spout. The 19th century whalers kept lookouts aloft on the whaling grounds to watch for spouts, because the spouting of a large whale is visible for miles. When a spout was spotted the lookout would call out, "Thar she blows!"

The officer of the deck would inquire the direction of said whale with, "Wharaway?"

The answer would be given in relation to the ship's apparent heading such as, "Three points off the stabbird bow."

Remember that these were iron men in wooden boats. Few of them were charm school material, with "The Right Stuff, so one must forgive them for bellowing back and forth like the low class louts they were. The blowhole, vital to the whale's survival, was also its Achille's heel. Several decades ago another species of mammal plunged into the black depth of space. These astronauts were iron men in titanium ships who ascended into the sea of space close to our atmospheric shore. Then somehow, they began to change and evolved into celluloid heroes who stroked our egos while feeding their own. They told and ostensibly showed us how they worked wonders as they descended onto the Moon's surface. But, like the whalers, this group of astronauts also had blowholes that were vital to their survival. These also turned out to be their Achille's heel.

Space Proctology — The examination of astronauts' blowholes.

Now let's practice our new found expertise as space proctologists by making a thorough examination of the astronauts' blowholes. According to NASA our mighty mammals daring the darkness of space were just as dependent upon their blowholes for survival as are the cetaceans of the sea. The only difference is that space mammals use their blowholes to keep them cool enough to survive — not for breathing.

Despite the fact that the Apollo landings took place over 20 years ago and were not classified, NASA to this day will not release technical information. Perhaps the CIA worries that this information might help Iraq capture the Moon or give Khadaffi permanent camel-grazing rights up there. Just as NASA reports different oxygen pressures when Grissom was cremated, I found two different values listed for the pressure inside the suits. To give NASA the benefit of my doubts I will discuss only the pressure of 4.5 psi (which is the average between 3.7 psi and the 5.2 psi) that Frank Borman speaks of in his book.

We have all seen the astronauts as they gamboled about on the Moon's surface. After all, it was their hour in the Sun. In 1969, we assumed that the do-all backpack provided for all the necessities of life. Since space was "cold" the pack must also provide sufficient warmth, while maintaining proper pressure, oxygen, dehumidification, etc.

In 1969 nobody talked about cooling the air, and it was in my head that the suits needed heat not air conditioning. After all, didn't space age electric heated gloves and socks make their way onto the market about that time? Had the problem been one of cold it would have been easily resolved by the application of small electric resistance heaters in the suit. With all the insulation in that suit a tiny heater would have been quite sufficient. However, as I watched their Moon prance I still thought about the cold of space. I finally realized that the temperature of the Moon during the lunar day is hotter than boiling water so I knew the real problem had to be cooling. The Sun drives the temperature of the Moon's surface up to 243° F. and it would do the same to an astronaut. Insulation does not stop the transfer of heat or cold. It just slows it down. No matter the thickness of the oven-mitt on your hand, if you keep it in a 243° F oven for a few moments your hand will begin to feel very hot.

NASA wasn't explicit about the specific location of the astronaut's blowhole but had I been part of the design team I would have followed nature's pattern and put it through the bottom center of the back pack. The back pack is called a PLSS. This follows NASA's strange compulsion to make abbreviations of everything. It stands for "Portable Life Support System." A PLSS ready to use weighs 84 pounds on Earth, 14 pounds on the Moon, stands 26 inches high, 18 inches wide and 10 inches thick.[1] The pack has a total volume of only 2.7 cubic feet, but NASA claimed it provided total life support for four long hours. The back pack holds an oxygen bottle, a carbon dioxide scrubber, a dehumidifier, a water bladder for the cooling circuit, another bladder water to be ejected, a heat exchanger, a radio that monitors bodily function, a communications radio with power enough to reach Houston, and 4 liters of water. To top that off, it also contains a battery large enough to power everything in that pack.

They claim to have sent the LEM onto the Moon with only enough air-conditioning capacity to cool the electronics, yet they put an air cooler in the suit. Was the suit on a different Moon? NASA claims that the astronauts wore long-johns into which had been sewn

[1] 26 x 18 x 10 / 1728 cubic inches = 2.07 cubic feet

thin water filled plastic tubes connected to a water filled bladder-reservoir. "... on Apollo a more efficient cooling scheme employed water-cooled underwear into which tiny plastic pipes were sewn."[2] Hot air in the suit, generated by the astronauts metabolic process, is apparently fanned across the water-filled tubing. The water is then pumped into a plastic heat exchanger in the PLSS. When the suit begins to heat up, the astronauts turn up the control which ejects the dump water from their blowhole over the heat exchanger. "The water was forced outside the suit, turned to ice and vaporized."[3]

The only advantage of plastic in a space suit is its flexibility. Otherwise, plastic is about the worst choice possible for a heat exchanger because all plastics are basically insulators. However, this system could work if the PLSS carried enough water. It is obvious that the unit apparently functioned perfectly because at the end of each Apollo mission our celluloid heroes returned to Earth none the worse for wear. Just to keep NASA honest, let's calculate the water required to do the job. The silhouette of an astronaut covers about 3/4 square meters. Using an absorption/emissivity coefficient of .2, the solar radiation absorbed would be 203 watts.[4]

According to the authors of First On The Moon each PLSS, "was built to catch and disperse metabolic heat generated by the astronaut at an average rate of sixteen hundred British Thermal Units an hour –".[5] Since a BTU equals .2928 watts we have a total of 368 watts.[6] This should be added to the Sun's heat value for a total heat input of 571 watts.[7] However we should calculate the heat radiated by the shady side of the suit. Before proceeding we must determine a temperature for the air in the suit. The higher the temperature, the easier it is for the air cooler to do the job. Let's assume that their suits stayed at 100° F. Looking back to the Temperature Conversion chart we see that this temperature is 311° Kelvin which we need to know in order to use the Stefan-Boltzmann radiation equation.

We must invert the original formula to look like this.

$$I \text{ (watts)} = K^4 Aea$$

Thus we find that there are 80 watts being radiated.[8] This must be subtracted from the 571 total watts, which leaves us with 491 watts.[9] To round out the numbers we add 9 watts for radios, pump heat, etc. for a total of 500 watts.[10] Since there are 860 calories

[2] p. 117, CARRYING THE FIRE, Collins, 1974, Ballentine Books
[3] p. 221, WE REACH THE MOON, Wilford, 1969, Bantam Books
[4] 1353 watts/meter square x .2 x .75 = 203 watts
[5] p. 261, FIRST ON THE MOON, Farmer & Hamblin, 1970, Little, Brown & Co.
[6] 1600 BTU x .2928 watts / BTU = 368 watts
[7] 203 + 368 = 571 watts
[8] I (watts) = 311^4 x (.75 x .2 x 5.673 10^{-8}) = I (watts) = 79.6
[9] 571 - 80 = 491
[10] 491 + 9 = 500 watts

per watt and, assuming we can work at 100% efficiency we must make enough ice to carry off 430,000 calories per hour.[11] In 4 hours that adds up to 1,720,000 calories.[12]

To lower the temperature of one gram of water one degree C requires the loss of one calorie of heat. Upon the formation of ice, a gram of water loses 80 calories. Therefore a temperature drop from 100° F (38° C) down to freezing (0° C) entails the transfer of 38 calories, and when that gram freezes it absorbs another 80 calories for a total of 118 calories per gram vented out the blowhole. If we divide that 1,720,000 calories by 118 we get 14,576 gms of water that we must eject.[13] This is 14.6 liters, which equals .514 cubic feet.[14] That would take up 1/4 of the PLSS's volume.[15] The weight of this is 32 pounds on Earth, which is or 38 % of the total claimed weight.[16]

So let's take off the kid-skin gloves and get realistic. Using an efficiency of 40 %, which is still high compared to most mechanisms, and a suit temperature of 80° F, we find that 23.78 liters of throw away water is needed. This is 52.3 pounds on Earth, 62 % of the PLSS's total weight and .839 cubic feet which is 40 % of the unit's volume. Remember that the pack also holds an oxygen bottle, a carbon dioxide scrubber, a dehumidifier, a water bladder for the cooling circuit, dump water bladder for ejection, a heat exchanger, a radio that monitors bodily function, a communications radio with power enough to reach Houston. And it also contains a battery large enough to power everything listed above. Can you fault me for feeling that these packs were designed and fabricated by the Wizard of Oz?

If we divide the 23,788 gms of water by 240-minutes we get 100 grams a minute being spewed out the blow hole. At an efficiency of 40 %, 60 grams a minute of frozen vapor would escape the heat exchanger, making quite a whoosh as it ejected. Did anyone hear the astronauts make any whale jokes about their blow holes? When the other guy's suit vented, did any body ever shout? "Thar she blows!" Or is it that any type of venting simply not done in public?

Much more realistically our space heroes should have pranced about carrying a Robinson Crusoe parasol. Blocking direct solar radiation would have alleviated most of the heat absorption problem, at least while they were walking on the Moon. However, not only would it have affected their macho image by carrying a Mary Poppins umbrella, it would have been a severe impediment as they went gamboling about. Also, it might have pointed a hot finger at the naked LEM sitt in g in the broiling Sun without any type of shade. That's the very last thing that NASA needed.

[11] 500 watts * 860 calories/watt = 430,000 calories
[12] 430,000/ hr * 4 hrs = 1,720,000 calories
[13] 1,720,000 calories / 118 gms/ cal = 14,576 gms
[14] 14.6 liters * .0353 liters/cubic ft = .514 cubic feet
[15] .514 cubic feet / 2.07 cubic feet = 25 %
[16] 14.576 kg * 2.2 pounds /kg =32 pounds

NASA claims that rotation kept the command ship cool. Maybe the astronauts should have pirouetted like ballerinas as they went their merry way. But then would this have seemed less than masculine? In the end the only thing that could have preserved their lives for all those hours in that Sun was air-conditioning, which they didn't have. If they had really had suit air-conditioners that worked, every time the suit was vented into the high vacuum of space the rocket-effect should have been spectacular. A rapidly expanding fog of ice crystals would have reflected the brilliant unfiltered sun light; spraying millions of tiny diamond-like crystals about and producing a brilliant, dazzling and unforgettable display.

We can be sure our astronauts never released water in this manner, since, not one of the thousands of pictures taken on the Moon, or during the space walks, has ever shown such a display. NASA would hardly pass up a spectacular photo opportunity like that! Buzz Aldrin wrote that it was so cold in the LEM's cabin that he turned off his suit conditioner. On the other hand, Collins states, "Their allotted 2 1/2 hours goes swiftly and then they clamber back into the Lunar Module, shut the door, and repressurize the cabin."[17] This is very strange, since the suit's conditioner, if it exists in the first place, couldn't possibly work in the LEM's pressurized cabin. It can only work in a vacuum. One wonders if these two astronauts went to the same Moon together?

Another logical problem is found in the ballooning of the space suit because of internal pressure. Since the beginning of science fiction a flexible cloth suit has been the standard garment worn in space. Collins speaks of the Apollo suit and claims that the internal suit pressure is only 3.7 psi.[18] He goes on to explain how this inner tube-type ballooning from pressure is overcome. "Instead of having a simple restraining net, it controlled the shape of its inflated bladder by a complex array of bellows, stiff fabric, inflexible tubes, and sliding cables."[19]

The wall of a standard inner tube is a little over a sixteenth of an inch thick and it has only rubber in it. The rubber is very flexible even with 3.7 pounds of air in it. However, a bicycle tire's side-wall is less than twice as thick, yet it is laced with stiffening fibers. Even without pressure it is quite inflexible. The thicker the covering the more fibers it contains and, despite the shape, the more inflexible it becomes. No matter how much time and money one spends on a fabric suit it will still balloon. If you think a double layer of cloth with internal struts to hold the layers parallel would do the trick, think again! This would create skin stressed material which would become much stiffer.

Consider a deep sea diver's rubberized canvas suit. The suit is awkward and to say the least, uncomfortable, yet a diver can walk around in it and work in it — as long as the diver is careful to keep the internal pressure closely matched with the external water pressure. Should the diver accidentally let in an extra pound of pressure the suit will balloon. The

[17] p. 8, LIFTOFF, Collins, 1988, Grove Press
[18] p. 115, CARRYING THE FIRE, Collins, 1974, Ballcntine Books
[19] p. 116, Ibid.

arms and legs will stick straight out with a force that is almost savage. And a diver's suit is completely waterproof. Even the slightest leak would allow air to leave or water to enter. But if his suit was closed with a long zipper would it still be waterproof?

A fabric space suit is sort of the obverse of a fabric diving suit. The first keeps the internal and external pressure matched, and the second keeps the pressure in. A fabric space suit must be designed to keep the vacuum out, but you can bet that oxygen would leak out through the smallest of pinholes. A pressurized oxygen supply might be able to keep up with a small pinhole or two for a while, but not with the leakage from a long zipper! Despite this Lloyd Mallan writes, "As a matter of fact, Hamilton Standard had already achieved a space suit with 93 percent of nude range (nude mobility) before October 1968, when they demonstrated it before the aerospace scientists and engineers attending the Fifth Annual Meeting of the American Institute of Aeronautics and Astronautics held in Philadelphia, Pennsylvania. Live demonstrations of the suit during the week long meeting attracted wide interest and attention – plus some disbelief. It was hard for some of the onlookers to believe that so much mobility could be designed into an inflated space suit."[20] Why do I suspect that this suit used a doctored pressure gauge, and was really inflated to much less the 3.7 psi?

Harry Hurt describes the cramped quarters of the LEM and explains that suits had a long crotch-to-shoulder zipper which could only be closed by another astronaut. This zipper starts at the front of the crotch and travels between the legs up the spine to the collar. Collins tells us that, "Interlocking rubber lips on either side of the zipper formed a pressure-tight seal."[21] But no matter how many interleaving rubber seals there may be, it seems to me that every motion the astronaut makes allows the gaskets to leak a little, like a thousand tiny pinholes were present.

There are three pictures on page 412 of the book Manned Space Flight showing the 'new' Apollo pressure suit, which NASA called the AL7B. Around the neck is a neck-ring where the helmet can be secured. One can also see bellows around the elbows, semi-bellows around the shoulders; metal swivel joints on the thighs and the knees. There are also strange laced shrouds on the mid-forearm and the mid-shin. Are the shrouds pressure resistant closures? A football and a punching bag have laces, but these are only on the covering. The bladders inside have one-way air valves. How long would the air stay in the tires of your car if they were laced and/or zipped closed? How long do tires stay inflated with pinhole leaks?

The next strange thing these pictures show is the cable that Collins talked about. It starts on the back next to the zipper opposite the shoulder, but two inches lower. From there it goes into a piece of tubing that curves around the outer arm; then it proceeds to the middle of the chest above the sternum. It must be there to restrain any ballooning,

[20] p. 239, SUITING UP FOR SPACE, Mallan, 1971, John Day Co.
[21] p. 79, LIFTOFF, Collins, 1988, Grove Press

which would cause the arms to rise at the shoulder. Any ballooning would exhibit itself as a force starting from the finger tips and acting on the whole arm, as a lever, against the attachment two inches below the joint.

This obviously puts a great tension on the fastener next to the zipper, and would tend to squeeze the chest from both front and rear with immense force. It would if it didn't rip the zipper apart. Zippers rip apart rather easily. I wonder what type of marvelous zipper was invented that they are still hiding from us. Why didn't NASA claim such a foolproof, impervious zipper as another spin-off against the taxpayer costs of the space race?

Every time we've seen the space suit it is covered with a white coverall, which makes one wonder. The neck ring indicates that this coverall must also be a pressure suit. It would make no sense to fasten the helmet to a non-pressurized outer garment. Another connection problem lies in the stainless steel rings which terminate the sleeves about mid-way down the forearms. How did they attach the gloves to this suit? What did they use, another leakproof zipper? Or were they fastened into a track with a twist and a click? Also how do you fasten the outer gloves which are apparent in every picture? Are the boots integral with this suit, or are there laces? Collins claims that his boots and gloves were pressurized, and that the gloves ... "When inflated they tend to become flat and bloated with fingers extended."[22]

It is possible, of course, to make the boots and gloves as part of the garment. But how do you move your hands with the gloves ballooned at 4.5 psi? Did they have bellows and cables in the gloves too? No matter. I would like to see one of their gloves inflated inside of a vacuum chamber in which the pressure has been reduced to about 10.2 psi. I'd like to see the hand that could repeatedly flex this glove against the ballooning. A boxers speed bag inflates to 4 psi, but I'll bet that there's no man who could bend it in half like flexing the fingers does a glove!

On the other hand, maybe the gloves weren't pressurized! If they weren't then the wrist cuffs would have to be extraordinarily tight to prevent excessive oxygen leakage. Cuffs that tight would obviously impair the circulation to the point of gangrene. At least that's what happens to normal people who leave a tourniquet on too long. When our blood pressure is taken, a blood pressure cuff is used. Squeezing a small bulb provides sufficient air pressure to inflate the cuff. This in turn acts as a tourniquet and stops the flow of blood in the artery of the arm. The pressure needed is only slightly higher than the pressure developed by the heart which is 100 torr or 1.93 psi.[23] Then by listening to the equilibrium points one determine our arterial and venous blood pressure. The use of this cuff can border on pain, and one breathes a sigh of relief when the pressure is released. By the same token, a young man's penis when erect, is almost unbendable at an elevated blood pressure of 2.32 psi.

[22] p. 79, Ibid.
[23] p. 231, COLLEGE PHYSICS, Tipler, 1987, Worth Publishers, Inc.

Today many ambulance crews carry a low pressure emergency medical device called MAST pants. This acronym stands for Mobile Anti Shock Trousers. They consist of pants which contain a pressure bladder. They are put on accident victims and the bladder is inflated with air by a hand bulb. This provides sufficient pressure to force any remaining blood from the legs into the chest area. These pants are used as a last resort measure, and are only removed at the hospital.

According to my first aid instructor, tourniquets must be released every ten minutes or the affected tissues will die, and gangrene will set in. How did NASA create a form-fitting, full body bladder (including other bladders at the hands and feet) that aren't painful, or doesn't stop the flow of blood? Another thought! If the gloves weren't pressurized how could the human heart pump the blood from the hand at a pressure of 1.93 psi back to the heart against the suction of 4.5 psi? Did NASA modify their hearts? Were these men bionic?

Consider the common phenomenon of a "hickey", the red mark left after the vacuum induced by a kiss. A hickey on the human body results from a pound or two of pressure differential. In a full vacuum the hands and feet would become a festering mass of hickeys. That is, unless the gloves and boots were pressurized.

At the start of this chapter I noted we would only deal with 4.5 psi. All the difficulties mentioned in this chapter would be much greater if the su it pressure was actually 5.2 psi, as Frank Borman claimed (which I now believe to be true). To demonstrate this principle for a book trade show in Atlantic City during October '93, I made a "Space Glove". I welded together a steel vacuum chamber with a flange on one end. To this I attached a neoprene-coated, cotton-lined glove. One side of the chamber was plexiglass so the glove inside could be viewed. When there was no internal vacuum the fingers inserted into the glove could be easily clenched, and the hand freely rotated and flexed within the limitations usual for all gloves.

I exhausted the chamber to 10.2 psi which put 4.5 psi inside the glove. The vacuum pump used was capable of moving 3 cubic feet a minute and at first it was unable to decrease the pressure to 10.2 psi. The glove was leaking air around the 12 inch periphery of the flange, despite the fact that it was tig htly clamped with a worm driven stainless-steel band clamp. That leak drained twice as much air as a man breathes. No, I didn't spend tens of millions for research and development, but I still wonder how much oxygen a crotch-to-shoulder zipper would leak.

Once my demonstration glove balloons around your inserted hand, it requires great effort to move either fingers or hand. It also becames impossible to flex the wrist backwards, although the lever arm is only a normal 7 inches from fingertips to wrist. With that in mind, imagine the effort needed to bend an elbow against a lever arm of 24 inches, measured from fingertip to elbow! How could you move your shoulder and lower your arms or swing them forward against the 36 inches of lever arm found here? I seriously doubt if

Hulk Hogan could move his arms in a fabric space suit. Hey NASA, let's do a TV special to prove me wrong! You provide the suit and I ' l l provide the air pump, pressure gauge and a consumption meter to measure zipper leakage. For some strange reason the space coveralls had an external pocket on the shoulder of the right sleeve, which according to Mallan's book on spacesuits was for sun glasses. The coverall was only worn outside the ship. At that time you had on the fish bowl helmet. What could you do with sun glasses?[24]

In December of '93, NASA claimed to have repaired the faulty mirror on the Hubble telescope. I had, and still have, a problem with this. Bright grammar school kids have been grinding telescope mirrors by hand for 200 years and seldom do they fail to get it right. One can use a simple tin can pierced with many tiny holes for gauging correct curvature during grinding. In May of 1990 a NASA shuttle carried and deployed into space an incredibly expensive toy that had already cost 1.5 billion plus. Months later NASA reluctantly informed us that the Hubble's mirror was not ground properly. That toy was backed by a full-time staff of 300 scientists and engineers and none had ever checked the mirror before launching.

NASA also mentioned that the Hubble had a wide-angle planetary-camera attachment. My question was why? The only planet too close to study without a wide angle lens is the Earth. (Which leads us to the happy thought that there never was a thing wrong with the Hubble and the CIA used it as a "Spy Eye"). This also makes no sense! Eric Chaisson, author of The Hubble Wars reports that during "Operation Desert Storm" the military had a fleet of at least six "Keyhole" space telescopes that were operational. Some were as big as the Hubble.[25] They tested all of these but forgot the Hubble. Sure they did!

As 1993 ended our TV screens were flooded by pictures of the shuttle crew working on the Hubble. I have been a mechanic all my life and you simply can't work with small fasteners with heavy gloves on. Yet, there they were in the full vacuum of space replacing the equipment. Not only were the suits not ballooned, but neither were the gloves. I also saw one short film clip of one of the astronauts with his hand limply bent down over the edge of a console. My space glove proves this can't happen. But the pictures exist!

Civilization was created by and continues because of our ability to construct buildings and machinery. Construction of any sort depends on being able to design members that are stiff enough to resist the predicted loads. Those predictions are all based on the fact that whenever we add anything to any structural member, whether paper thin or yards thick; whether flexible as a sheet of rubber or as stiff as concrete column, the addition will increase the resistance to bend (the stiffness).

The "Michelin Man" effect of any fabric space suit precludes any real work being done in open space. I believe, the Hubble was worked on with the space doors shut and the bay pressurized, or the tapes were synthesized underwater in the crystal clear pools, where

[24] p. 228, SUITING UP FOR SPACE, Mallon, 1971, John Day Co.
[25] p. 250, THE HUBBLE WARS, Chaisson, 1993, Harper Collins

the astronauts practice for space missions. Or they could have developed an armored, articulated suit that is covered with fabric as a disguise. It is not likely, because the hands can't be armored and then must end in hooks. This may have been no more than a slip of the tongue, but at 5:30 Friday morning, December 10, 1993 I was watching the release of the repaired Hubble on CNN. An announcer, named Bob, was describing it and said the words, "commanded the Shuttle doors to open".

Despite the fact that I have been assured by various NASA space experts that space gloves allow manual dexterity, and suits do not balloon, I shall reserve judgment until NASA publicly demonstrates that I'm wrong about the amount of zipper leakage and ballooning of Apollo suits and gloves. Let them take one of the suits (say the one in the Museum of Space in Washington, DC) and suit up an experienced spacewalking astronaut. Eric Chaisson also let the pressure cat out of NASA's space bags. He claims the suit pressure is 4.1 psi.[26] With this figure in mind, let's have NASA pump in 18.8 psi into the suits for the demo. This is equal to the differential in pressure between 4.1 psi in the suit when it is in space and the zero pressure found there.

If NASA complies, get your cameras ready folks. I predict that at any of the pressures described for the suits the astronaut choose for the demonstration will resemble the "Michelin Man" and wouldn't be able to move very well. I also predict that if the input air is metered as to volume, it will show that the suit leaks more cubic feet of air in 15 minutes than all the oxygen the PLSS could have held.

12.1 ADDENDUM

Something one of my readers said gave me the idea to test the body when placed in a 5.2 psi atmosphere. After all, this was the pressure the astronauts were supposed to live at when in space. I removed the space-glove from my vacuum chamber and inserted my right arm. Since the machine automatically takes in air through a small valve purposely left open to prevent continual starting and stopping of the vacuum pump, I figured that all I had to do was turn the switch off and the vacuum would quickly dissipate. I threw the switch and the vacuum began to suck my forearm deeper into the chamber.

This meant that more flesh was being jammed into the opening. As the gauge approached 5 inches of hg (2.43 psi), it felt as if a tourniquet was being applied. I couldn't see any change in the hand but it felt like it was swelling. There was also that feeling of pins and needles that came much quicker than any tourniquet could have caused.

As the needle approached the 10 inches of hg (4.6-psi) I became light-headed and decided to shut the machine down. The motor stopped and the dial began to drop. It

[26] p. 41, Ibid.

probably took only 3 or 4 seconds until the pressure equalized, but it was a reminder that 3 or 4 seconds can be a lifetime when a giant octopus has grabbed you. A half hour later I was still a bit light-headed.

Let's examine this. A few seconds with my lower arm at less than 5 psi, and I became light-headed, but men with "The Right Stuff" can spend weeks and months with their whole bodies at that pressure. If I had a few bucks and a place to keep it, I would now build a body-sized chamber (about a yard or so of concrete and some 8 by 8 inch mesh) and I would get NASA apologists to volunteer to enter this chamber and I ain't kidding! Then I would be able to see for myself if it is possible to be comfortable at 5 psi.

The following statement was made by Mallon while writing about Gene Cernan's Gemini 9 space-walk. "A leak in one of the gaskets around his wrist would have killed him."[27] From this it follows that the gloves (and boots) are not pressurized. On page 105 we also find the statement that "Three and a half psi are necessary to keep a man alive in space." And that is for a man at rest and not under the stress and strain of maneuvering about. They are called space-walks, aren't they?

Then we find the best quote in the book extracted from the work of Dr. Vail the expert in high altitude work in that period. "At 70,000 feet the bare hands swell badly in 30 minutes.".[28] The pressure at this altitude is about .8 psi which is better than the absolute zero of orbital distance and thus agrees with the swelling I immediately felt when I exposed my hands in the vacuum chamber of my glove machine. My body reacted faster because I have lost the resiliency of youth.

[27] p. 153, SUITING UP FOR SPACE, Mallan, 1971, John Day Co.
[28] p. 179, Ibid.

13 NO BUSINESS LIKE SHOWBIZ

Shortly after the rulers of the kingdom of NASA chose the "Seven Space Samurai" they must have known that man could not get to the Moon in their foreseeable future. As the years passed, and limited space probes penetrated near-space, NASA hid the fact that deep space, inhospitable at the best of times, becomes a sea of raging radiation when solar storms walk across the visible Sun's surface. The Sun, especially at the height of a solar sunspot cycle, is hardly ever without a medium flare which keeps us quarantined on our home planet.

Only actors working in a space opera could have survived such deadly items as: solar heat, space suits that leak, vacuum packed hands, and space radiation. Actors are not heroes and few heroes are made by performing in space opera serials. Out of the original seven astronauts, only Glenn, Grissom and Carpenter remain heroic. Of the second batch we should add Ed White and Jim McDivitt. Schirra and Stafford lost credibility after their fiberglass whip antenna failed to burn up during re-entry on Gemini 6-A .

Mike Gray writes about the heat of re-entry, "The planet's enormous gravity would pull you in at meteoric speed, and the heat generated just by running into the air molecules would turn ordinary steel to butter."[1] I guess that includes that fiberglass antennas. Or was it made of Buck Rogers "Impervium"?

From here on I shall use the derisive term "astro-nots" when speaking of the NASA actors who deceived us about going to the Moon. I am not sure about those involved in the Skylab fiasco, but I feel certain some lying was also done about it. I am also not sure how much of the low-orbit shuttle program is fanciful, yet I suspect much of which we are told about everything NASA does are lies.

1 also believe Don Eisele and Walter Cunningham flew their mission on Apollo 7 and McDivitt and Rusty Schweickart flew on Apollo 9. The list below consists of the men who did what was claimed.

[1] p. 29, ANGLE OF ATTACK, Gray, 1992, Norton

THE REAL ASTRONAUTS		
Mission	**Astronauts**	
Mercury 2	Gus Grissom	
Mercury 3	John Glenn	
Mercury 4	Scott Carpenter	
Gemini 4	Jim McDivitt	Ed White
Apollo 7	Don Eisele	Walter Cunningham
Apollo 9	Jim McDivitt	Rusty Schweickart

The men listed above did what they claimed. Now that we know who the real astronauts are, I specifically pronounce the names on the following list to be astro-nots who lied about their mission to one degree or another..

THE ASTRO-NOTS			
Serial	**Actors**		
Gemini 5	Gordon Cooper	Pete Conrad	
Gemini 6A	Walter Schirra	Tom stafford	
Apollo 8	Frank Borman	Jim Lovell	Bill Anders
Apollo 10	Tom Stafford	John Young	Gene Cernan
Apollo 11	Neil Armstrong	Mike Collins	Buzz Aldrin
Apollo 12	Pete Conrad	Dick Gordon	Al Bean
Apollo 13	Jim Lovell	Jack Swigart	Fred Haise
Apollo 14	Al Shepard	Stu Roosa	Ed Mitchell
Apollo 15	Dave Scott	Al Worden	Jim Irwin
Apollo 16	John Young	Charlie Duke	Ken Mattingly
Apollo 17	Gene Cernan	Ron Evans	Jack Smith

On every Apollo mission there was miracle after miracle! All miracles were adroitly handled by the men on this list who supplied the "Right Stuff to NASA. The cost to us American taxpayers was a mere 40 billion dollars. Gordon Cooper made the list because Gemini 5 got colder after the air-conditioner was powered down. Even Al Shepard, whose crown was safe as the first American in space, couldn't resist the siren call of more fame and glory. He just had to play golf on the Moon during the Apollo 14 mission.

We may never be able to prove which of the Gemini shots were real, but I have given the astronauts as much leeway as possible. Since the creation of the CIA, whenever pressure for the truth has been placed on a branch of our so-called democratic government, the powers that be place the records under lock and key for fifty or more years.

During the long years that those records are stored, roof leaks occur, windows blow out, fires start, and book-worms can run amuck digesting or shredding critical information. Electronic viruses get loose. Or history gets rewritten, as documents are altered to suit a

more preferred circumstance. I have no reason to expect any different treatment for the space program's archives. Wholesale fraud was committed, and nothing in the future will change, just as nothing happened after the Kennedy assassination, Irangate, the S & L scandals or the BCCI frauds. More recently we have Ruby Ridge, the Waco massacre, the OKC implosion and the WTC implosions. All of which were done with govrnment help.

As far back as 1969 various authors on space have come to the realization that NASA was really in showbiz. For example: "The final accolade, proof that they would be showbiz legends as well as nerveless technicians, was an exclusive contract for Life magazine for their "personal stories.""[2]

By the time Michael Collins entered NASA in April 1962 (as part of the second batch of astronauts) NASA had already instituted a policy wherein each candidate had to attend, in essence, a charm school before acceptance. Collins explains, "At any rate, like would-be radio announcers, we read selected passages aloud, and these were critiqued at great length ..."[3] I may be just a bit cynical, but doesn't it sound more like preparation for a space opera than real exploration or adventure?

From the Mercury Program right through the Apollo hustle, we were led to believe that such men with the "Right Stuff couldn't and wouldn't ever tell a lie. Some were graduates of the top flight military academies including West Point and most everyone else was an officer and gentleman by Act of Congress. They would rather die than lie. This we were told. This we believed!

However, as one small counter illustration straight from the horse's mouth we have Buzz Aldrin writing about his matrimonial problems. He states how he manfully used his military academy honesty to resolve the situation caused by his extra-marital affairs. He writes, "And what did I do, I lied."[4]

He was also not above submitting his psychiatric bills to the Air Force, masked as if they were family counseling charges, so that no one would suspect he had many other problems.[5] Maybe the rest of us would have done the same dern thing in such situations, but, we are not West Point graduates, nor officers and gentleman.

Or consider this anecdote. Aldrin was given the job of playing host to a gaggle of visiting Russian cosmonauts. He offered them an insider's, no strings attached, visit to the spaceport. Yes, he did too. So there! It's in his book. They declined the offer; yet when they were later asked by the press about visiting Cape Kennedy they lied and said they hadn't been invited.

[2] p. 139, JOURNEY TO TRANQUILITY, Young, Silcock & Dunn, 1969, Doubleday
[3] p. 23, CARRYING THE FIRE, Collins, 1974, Ballentine Books
[4] p. 270, RETURN TO EARTH, Aldrin, 1973, Random House
[5] p. 277, Ibid.

Yet, when writing of this incident, which may have been a cold war gambit, Aldrin was horror stricken. He proclaimed, "There are many things I might do under similar circumstances for my country, but I'm not about to lie."[6] Say what??? Why bring this up? Only for the fact that right from the instant of the Apollo 11 launch there were many people who didn't believe men were on their way to the Moon.

Harry Hurt writes, "Although Project Apollo was one of the most extensively documented undertakings in human history, many of the earth's five billion inhabitants still refuse to believe that twelve astronauts really did set foot on the Moon. Exactly how many people cling to this preposterous heresy is unknown because there has never been a world wide opinion poll on the subject. But just as the Flat Earth society in London continue to dispute evidence that the world is round, untold numbers of serious and not-so-serious disbelievers continue to insist that man's first lunar landings were actually a series of government-sponsored Hollywood hoaxes."[7]

I wonder why he used the word "heresy". Is NASA's dogma now a part of a religion? If so, I haven't yet heard about it. Does doubting a NASA (read CIA) pronouncement become heresy? Is it punishable by excommunication or by roasting? Mr. Hurt seems hurt by this "preposterous heresy" on a worldwide basis. Outside the fact that NASA showed him the same pictures we have examined here, he did appear to have inside information, not available to the rest of us. Although he had the inside track, he apparently never once questioned NASA about a single word or picture. Because of his lack of critical analysis it became my chore to question the whole production. It's not a pleasant or easy task. It may even prove to be lethal.

It is well known that some actors, even some who have spent decades treading the boards, are susceptible to stage fright. They become unglued just before the show starts. Most professionals, however, have the ability to reach deep inside themselves and take up a fast hitch on the stomach butterflies, and when the curtain rises, hit the stage running. Many amateurs quit performing because of stage fright. Why is it that, without a single exception, the Apollo program astronauts are extremely adverse to public speaking and appearances? They were much more so than other groups of such prominent men.

Many years ago Buzz Aldrin was being interviewed at a banquet in Lancaster, California. He writes, "The first question Roy Neal asked was, "Now that almost two years have gone by, why not tell us how it really felt to be on the moon?"[8]

Buzz explains in his book, "If any one question was anathema to me, that was it. Roy, I suppose felt he had no choice. Yet it has always been almost impossible for me to answer with any sort of decent response. My throat went dry and I got dizzy."[9]

[6] p. 274, Ibid.
[7] p. 323, FOR ALL MANKIND, Hurt, 1988, Atlantic Monthly Press
[8] p. 280, RETURN TO EARTH, Aldrin, 1973, Random House
[9] p. 280, Ibid.

He then adds that a little while later he bolted from the room, shaking uncontrollably, and then began to cry. He never tells us why. I have heard that he had a similar reaction at Edwards Air Force Base. This is definitely no longer a man with "The Right Stuff."

I am not a psychobabbler, but I've been on this planet long enough to recognize a man who has a terribly troubled conscience. I doubt if infidelity or any other such common problem caused it. To the contrary it strikes me as suffering from trying to live out the Big Lie.

The only possible question left is whether this ghost is known to him, or whether it lies deeply buried in his sub-conscience placed there by hypnosis and drugs. If the ghost was generated by governmental psycho-babblers using brainwashing techniques, he should be more pitied than censored. Maybe time will tell which circumstances apply.

Since the end of the 1940's most show business production companies have become color blind. But NASA, operating in its own insular world, couldn't have cared less. They were lily-white for years, until they finally found one black man who had "The Right Stuff." According to Collins, "The closest this country has come to having a black astronaut was the selection of Major Robert H. Lawrence, Jr., on 6-30-1967, as a member of the Air Force Manned Orbiting Laboratory astronaut group. A PH.D. in chemistry in addition to being a qualified test pilot, Lawrence was killed on 12-8-1967 in the crash of an F-104 at Edwards AFB."[10]

Here is yet another astronaut that died in an accident. One wonders: did he ask too many sensible questions, did he smell a hoax, or did he prove resistant to hypnosis? I wonder how many more astronauts died who were completely missed by popular writers of the era. It is extremely hazardous to the health to be associated with NASA.

Knowing that the Moon landings were not possible from the start, I believe that NASA poisoned the space apple right from the first Mercury mission by sucking the astronauts into telling the little lie about the dim and fuzzy stars. Otherwise why would Alan Shepard have lied about the stars? Why did Grissom follow suit? And almost every other astronaut lied right to this day?

I expect that NASA didn't come right out with it, up front, and tell them the whole space race was a sham. It is the first rule of spooks to enlighten only those who need to know, and to tell them only enough to be able to perform their mission. I am confident that the astronauts were told that the dim and fuzzy star thing involved American security, and that such disinformation would help us to beat the Russians to the Moon.

It was a tiny little white lie, which was needless too, since the Russians had already been in orbit. Once the lie was publicly uttered it trapped the astro-nots ever more deeply until they were enmeshed in a web of deceit, treachery, murder and lies. It's the same

[10] p. 176, CARRYING THE FIRE, Collins, 1974, Ballentine Books

web of lies that covert intelligence operators have spun ever since the first despot became insecure enough on his throne to feel the need for covert assassins.

The small successes of the Mercury program, weighed against the huge successes of the Russian bear, were pathetic. NASA's funding just kept climbing until it was stratospheric and eventually produced the Gemini Program. This, in turn, led inexorably to the Apollo grand ol'-space-opry when any real Moon landings were forgotten and show business became the primary business for NASA. It continues to this day.

Then each day after that, carefully screened and select personnel — including those astro-nots who actually flew — were gently led down the primrose path that culminated with those alleged, all the way to the moon shots, and the six alleged landings.

As I have previously reported, the first three Apollo missions were figments of NASA's imagination. Of those that launched, I believe that only Apollo 7 and Apollo 9 were real because they never had to pretend to leave Earth's orbit. These were the missions that got us back in the space game after the fire. In addition, if the big bucks were to continue flowing, NASA wouldn't have chanced faking this one!

(The remaining Apollo flights may have orbited the Earth for a while, but probably used the emergency escape rocket to bail out before orbit was even established. The astronots would have dropped into the south Atlantic and been rescued by CIA ships. After a nice vacation on a sunny beach, they were flown out to the recovery zone and dropped, capsule and all, out of one of the CIA's huge cargo planes. The CIA owns the largest commercial air fleet in the world, including huge cargo planes which operate year after year. I originally wrote "The CIA has tremendous outgo — except for our taxes — has no other known income (except that provided by gun running, the importation of aliens and drug deliveries). What customs or immigration inspector ever checked out a single one of their planes or boats? By definition the CIA is hardly a clean operation." Since NASA continues to operate after their budget was chopped, weknow now that all the bureaucracies must receive some direct funding from the FED. I have also found out that our income taxes disappear into the International Monetary Fund.)

Collins claims that all his doubts were expressed by NASA's safety chief three days before the Apollo 8 flight. "While the flight posed fewer unknowns than had Columbus's voyage, Jerry said, the mission would "involve risks of great magnitude and probable risks that had not been foreseen. Apollo 8 has 5,600,000 parts and one and one half million systems, subsystems, and assemblies. Even if all function with 99.9 percent reliability, we could expect fifty-six hundred defects ..." "[11]

Mike Gray in Angle of Attack writes, "To reach the moon and return, some three million pieces of manmade artifacts had to interact with an almost mystic cohesion heretofore seen

[11] p. 307, Ibid.

only in Nature herself. The fact that the machine worked at all was a miracle.[12] "The fact that it worked with such stupefying precision was evolutionary."[13]

Before Collins went out to risk flesh and bone on the mythological Apollo 11 he said, "I think we will escape with our skins, or at least I will escape with mine, but I wouldn't give better than even odds on a successful landing and return. There are just too many things that can go wrong."[14]

After this reflection where he gives even odds, NASA tosses the coin and comes up heads seven times in a row! The odds against doing that with a coin are 128 to 1. The odds against that, considering the capsules and rocket enginess, are so incredible that God must have indeed been the co-pilot on these missions.

However, to all of us who were glued to the TV, myself included, those ". . . million souls who watched dumbstruck as the great machine ascended, there could not have been the slightest doubt that this thing was leaving the planet."[15]

Against odds like this NASA claims to have launched nine birds all the way to the Moon and back with no loss of ships or life. Sure! And yes, Virginia, there is a Santa Claus, Easter Bunny and Tooth Fairy, the check's in the mail, and no, the computer is never down!

The Apollo 8 & 10 flights acted like the prelims on a fight card by attracting attention. They helped set the mood until the real soap opera could start. Lift off was the only real thing about each of the later missions. The astro-nots had to be aboard when the rocket was launched — in case it was destroyed during that launch, as was the Challenger Shuttle. Three live astro-nots couldn't be miraculously explained away. We were gullible, but this would have been too much to ask even us to believe.

If they were alive, when all should have been dead, even CIA heavy hitters might balk at triple whacking American heroes. Because people are criminals doesn't make them any less patriotic. Jimmy Carter's Pentagon learned this fact the hard way on that misadventure to Iran when they tried to free the American hostages. Shortly after our assault copters landed in the desert the troops caught a few smugglers, but the commander in charge of that mission foolishly let them go. He thought because they were criminals they would not report the Americans. But they went straight to the police and ratted out the mission.

Look at my own case. If someone had told me in the late fifties after my war with the army, that I would risk ridicule or worse to warn my country of disaster looming

[12]That statement was made years ago. Since then, some NASA video footage (with sound) has surfaced (made in low Earth orbit) and dated July 17, 1969, when they were supposed to be halfway to the Moon, shows the Apollo 11 clowns faking pictures of a receeding Earth by blacking out the ship and moving the camera further from the port hole thus "proving" they were actually going to the Moon!

[13]p. 7, ANGLE OF ATTACK, Gray, 1992, Norton

[14]p. 364, CARRYING THE FIRE, Collins, 1974, Ballentine Books

[15]p. 275, ANGLE OF ATTACK, Gray, 1992, Norton

ahead, I would have laughed at them. I have discovered that patriotism does not involve supporting the current administration. True patriotism doesn't depend upon any political leader's opinions in a matter. It deals with what is good for the people as a whole. The trillion dollar Mars hoax will drown all of us.

Now that we have reviewed the actors, let's proceed to the space opera itself. During the Gemini Program NASA's focus slowly changed from solving real technical problems involved in forcing a new technology into existence, to the invention of cliff hangers for each new episode. Either the problems were simply too large to be solved, or they got too involved with Cold War dis-information.

And real problems did exist — in such copious numbers that nothing had to be invented. In December 1966 a report made by Joe Shea noted, "At least 20,000 failures of all kinds had been logged, he said, more than two hundred of them in the environmental control system."[16]

In Journey To Tranquility the authors point out, "In short, the two main engines of the lunar module had to be infallible. Yet in January 1968 the ascent engine in particular was proving to be only too prone to error."[17]

People who go adventuring in real life, unless they are suicidal, try to whittle down the odds against them by proper planning and provisioning. In a showbiz production, the excitement is frequently heightened by the dumbness of hero or heroine . For instance, our hero is shoved around by goons. Smack! Smack! Smack! They deliver the message from Mr. Big. Our hero lives; wakes up in a hospital to find either that his wife was raped and little dog killed, or vice versa.

Does he take out the top gangster that sicced the goons on him? Not quite! Throughout the rest of the production, he kills the underling goons five at a time, but never once does he take out Mr. Big. Only in the last scene, does our hero whup Mr. Big's ass and sends him off to jail with a black eye, instead of the grave where any normal man would have put him. Everybody in the audience over the age of twelve knows that Mr. Big will be out of jail on bond in a matter of hours. I guess that's show biz.

In the NASA serials Mr. Big was space and if NASA failed to maintain sufficient public interest, Congress would cut a good portion of all those beautiful bucks. To maintain interest they needed to create situations that promised danger and harrowing escapes. Never mind the fact that you will soon learn that not one manned mission dared go beyond the safety of our Van Allen radiation shield.

For example, on the Apollo 11 mission the LEM's computer gave out a "busy signal" in its final descent to the lunar surface. Then they had the added excitement of missing their

[16]p. 185, JOURNEY TO TRANQUILITY, Young, Silcock & Dunn, 1969, Doubleday
[17]p. 223, Ibid.

planned landing area so much that NASA was in effect screaming, "Car 54 where are you!" Or close enough to it.

Then there was the great evacuation flap when Armstrong and Aldrin took four hours to evacuate once they were on the Moon. Practicing quick evacuations here on Earth take some time, but 4 hours is ridiculous. They complained that too much gas got in the way. But finally, because they had "The Right Stuff" they were able to get rid of the gas and go about their real job, bopping around the Moon mouthing platitudes. I speak here of the air in the LEM, naturally.

Harry Hurt tells us, "Armstrong and Aldrin expected their EVA (walk on the Moon) preparations to take about two hours, but they ended up taking twice that long because the exhaust gases from the backpacks compounded the difficulty of depressurizing the cabin of the lunar module."[18] But please remember what you read about the suit's air conditioning not being able to work once they entered the LEM.

Well, Buzz, wasn't the Command Capsule a mansion in comparison to the LEM's tiny cabin? If it took you 4 hours to vent the LEM in space because of your exhalations, how could you ever believe NASA when they told you (before the Pad 34 cremation) that an oxygen fire could be quickly vented to space?

Not to be scatological, but that scenario is so much bovine fecal matter. I used to scuba dive and know that a man breathes a bit less than 72 cubic feet of air an hour in shallow water. Four-fifths of that is nitrogen which wasn't carried to the Moon. That leaves us with about 15 cubic feet of exhalation per hour per astro-not. In two hours that would be a grand total of 60-cubic feet of free air. This is the volume of a box that is 4 feet on each edge, or a big balloon a little over 3 feet in diameter. Not very much gas to worry about is it?

But they had to contend with even less than that because they had lithium hydroxide canisters which removed the carbon dioxide from the used oxygen so that it could be rebreathed. The space suits must have released little or nothing in the waste gas department, else we would have seen the water vapor in the exhausted gas periodically explode out from the suit into the zero pressure of space. Had that happened in real space, that water would have flashed into ice crystals as they were ejected, making a splendid showy snow.

Collins tells about such a show. "After breakfast I hook a full urine bag to the overboard dump and am rewarded with the usual snowstorm of escaping white particles. The constellation "Urion," as Wally Schirra has dubbed it, is formed by the instantaneous freezing of the urine stream as it reaches the vacuum of space and breaks into thousands of individual miniature spheres."[19]

[18] p. 173, FOR ALL MANKIND, Hurt, 1988, Atlantic Monthly Press
[19] p. 246, CARRYING THE FIRE, Collins, 1974, Ballentine Books

And even if they weren't scrubbing the gases on the LEM, the amount of gas we are talking about here would have passed through a pin hole in two hours. This is another whopper that Burger King had no part in creating! Here on Earth when we blow up balloons, they have a quantity of air at about a half a pound positive pressure. What happens when we let go of the narrow neck? PSSSSSSSSS and all the air is gone. In space and on the Moon they use oxygen at 5.2 pounds positive pressure and they are trying to tell us that PSSSSSSSSS no longer works. Look how much air a leaf blower moves and its working pressure is less than a half pound over atmospheric.

We read about how the Apollo 12's Lander almost dropped into the crater that held the Surveyor III. What was the only thing that prevented disaster? "The Right Stuff! The LEM was maneuvered safely to the far rim of the crater and teeter-tottered almost toppling over the rim. But our heroes' luck held and it settled down safely. The TV audience watching that exciting mission was small. The TV coverage was still superlatively lousy, so many people opted for the Ed Sullivan Show instead.

Before we proceed to the Apollo 13 episode of the space opera, we shall break in order to introduce the subject of the thermal roll. At the beginning of the Mercury program NASA found that the heat shields would crack if left too long in the cold of space. So Joe Shea, NASA's chief administrator, asked a pregnant question. "Shea asked how long it took for the heat shield to cool down to the point where problems began. The answer was about thirteen hours. So why did the spacecraft have to to stay in the same attitude for that long? Why couldn't it rotate, so the heat shield would remain nice and warm all the time? And that was the origin of what came to be known as the "barbecue" mode, or passive thermal control (P.T.C.), in which the space craft rotated once an hour all the way out to the Moon and back."[20] My question is why didn't they point the shield directly at the Sun instead?

Back in 1969 NASA's world famous space opera could easily have been called, "How The Ship Turns!" or the working title, "Rotate on This!" But the NASA script writers decided to spark up our jaded appetites with a close call. Accordingly, Apollo 13 had an oxygen explosion in the service module while it was half way to the Moon. The command capsule was knocked out of business and the power generation system was lost. Quick thinking by the men with "The Right Stuff and Houston Control got the fully charged batteries of the LEM to save the day.

However, without the heat supplied by things electrical the ship got a little bit cold. Not as cold as Maine fisherman live through most of the year, not as cold the homeless get in Chicago in the winter, but cold.

As Hurt tells us: "the astronauts' greatest physical discomfort was sheer insomnia resulting from their inability to get to sleep. Their insomnia resulted in large part from the

[20] p. 176, APOLLO The Race to the Moon, Murray & Cox, 1989, Simon & Schuster

loss of their primary electrical system. Although they spent their waking hours in the lunar module, they spent their rest periods in the darkness of the command module. With the power shut down, the temperature inside the mothership dropped to thirty-eight degrees. The astronauts tried to put the mothership into a thermal roll, but the maneuver, which turned out to be more of a wobble than a roll, failed to warm up the interior of the command module more than a few degrees. Appropriately, they dubbed the mothership "the refrigerator.""[21]

Once they were down on the ground, NASA magically discovered the cause of this little drama. They said a bad order to a technician months before had cooked the safety switch on that oxygen tank.[22] They must have the power of second sight to be able to pin the blame with such assurance since the service module was left in space. Either that, or this is the arrogance of accomplished con men.

The next episode in the serial is even better! As the Apollo 14 LEM was descending to the Moon the abort light on the control panel lit up.[23] Harry Hurt explains what happened after the mission: "Only after their return to Earth did they learn that the bug illuminating the ABORT light was a loose solder ball in the wiring."[24]

How did NASA discover that drop of loose solder after the LEM was dropped back onto the Moon? I'm really beginning to believe that the CIA resurrected Merlin the Magician and gave him a job with NASA as the assistant to the Wizard of Oz. Something else equally amazing happened on Apollo 14, but it's too good to tell now so I'll save it for the end of this section.

By the time it was Apollo 15's turn at bat, NASA's Nielson ratings were way down. The writers scripted another close call. This one had to be dramatic. This time the astronots almost drowned in space! Hurt explains, "On Day Three of the mission, when the astronauts were about two-thirds of the way to the Moon, the command module Endeavor sprang a water leak that threatened to flood the entire cabin. Scott, Irwin and Worden realized that a plumbing emergency in zero G could turn into a terrible nightmare, for there was no gravity to help them bail out the ship."[25]

And then, in the nick of time they fixed the leak. I wonder how much water you can carry in a service module? Is it really enough to flood the command module? Even so, it could all be ejected in a whoosh! All that would be necessary would be to suit up and open the venting valves. Or better yet, take a tube connected to that valve and literally vacuum up the water in little slurps and directly eject it into space.

[21] p. 212, FOR ALL MANKIND, Hurt, 1988, Atlantic Monthly Press
[22] p. 404, APOLLO The Race to the Moon, Murray & Cox, 1989, Simon & Schuster
[23] p. 223, FOR ALL MANKIND, Hurt, 1988, Atlantic Monthly Press
[24] p. 225, Ibid.
[25] p. 235, Ibid.

Since the same old hum-drum landing spots were getting boring ... they decided to land in the mountains this time. Hurt tells us about it: "Early on the morning of July 31,1971, the day of the landing attempt, Scott and Irwin had to confront the special dangers posed by the Hadley-Apennine region, whose rugged topography resembled the southern Rockies of the U.S."[26] This is truly unbelievable. If they wanted rocks from that particular mountain why didn't they wait until Apollo 17, when they would have a full-fledged geologist aboard?

Apollo 15 was also the first landing with the Rover strapped on the LEM. Imbalance in loading is the bane of airplanes and ships who use loading specialists to balance the loads. No matter how they loaded the Rover on the LEM, it had to create an out of balance condition as soon as the LEM entered any gravity field. It simply couldn't be centered. How do you land an unwieldy single jet vertical landing machine that's unbalanced? And why would you want to drive an experimental vehicle in a rugged mountain range?

Remember how before the Apollo 11 landing they were peeling Mylar from the LEM to get the weight down? But now they are carrying Rovers and supplies for extended stays, using the same machine that almost ran out of fuel on the much lighter Apollo 11's descent. How could this be? Apparently they suddenly had no more worries about either heat, oxygen, fuel or radiation. Did we miss something here? Of course, this Lander repeated a previous thriller. It landed on the edge of a crater and rolled around a bit before settling in.[27]

On Apollo 16, the next segment, a new trouble surfaced. The gremlins had finally managed to slip past the Army, Navy, Air Force, the Marines and — NASA. They got on board this bird. Harry Hurt writes that Mattingly reported, "I don't know whats wrong with this thing," "It feels like it's going to shake the spacecraft apart."[28] A few more heart palpitations, sure. But they landed OK.

Now, as promised, we bring you now the strangest part of this chapter. The Moon has 1/6 of Earth's gravity and absolutely zero air resistance. Even a duffer on the Moon should smack a golf ball about a country mile. A ballooned space suit might make a smooth swing a little bit harder, but even if this difficulty did not exist one could get by using one hand. Which allegedly is what Alan Shepard claimed he did. He rigged a club out of a metal flange and the handle of a sample retriever. When ready he dropped a smuggled ball to the ground and announced his intention to Houston and the watching world. The TV camera focused on him and he said, ""I'm going to try a little sand-trap shot here,". Then, as the world watched, he jerked his club back and swung at the ball and missed. Then he tried again.

> "The ball popped almost straight up in a cloudy divot of moon dust, and seemed to hang in mid-flight as if suspended on a string. Then it tailed off to

[26] p. 235, Ibid.
[27] p. 236, Ibid.
[28] p. 245, Ibid.

> the right, and fell back to the lunar surface less than 100 yards away. 'That looks like a slice to me, Al,' teased CAPCOM Haise.""[29]

Simple enough. A man sees a chance to make golf history with the whole world watching, even though he slices the ball. To dissect this absurdity I need digress again. When I was a kid I was able to see patrolling dragonflies snatch mosquitoes from the air. They never miss. When they dip, another bug is gobbled. I like dragon flies because I hate mosquitoes. I mention this only to show how good my eyes were. Rest assured that in playing baseball I knew a curve ball when I saw one.

So, when I was in high school taking physics from the school's (least athletic) teacher, he told us that a curve ball was a no-such. I took most of his teaching like a man. I didn't snivel when he said Einstein informed us that star travel could never be; I didn't even make much of a fuss when he lied about the no-suchness of giant squid. But this time he had gone too far. I saw balls curve.

Yet, nothing a kid could say would shake him from the vows he took when they handed him his degree and he swore to defend modern science; to never believe in the unexplainable which is defined as anything not printed as acceptable in the current physics theories. Years later, of course, physics bent just a bit and they finally admitted that a ball could curve just as baseball players knew all along. They went on to add that it curved because of Bernoulli's Principal.

A rotating ball induces unequal air flow over the ball's surface. This creates unequal pressures on opposite sides of the ball, which is then push-pulled from its straight inertial path. The magic word is air. Without air there would be no Bernoulli's Principal. Without air that ball, whether rotating or not, could only obey Newton's first law which simply and clearly states, a body in motion tends to remain in motion.

No one has really worked out all the physics of curving baseballs, yet, nor golf's hooks and slices. Golf balls are dimpled, for example, to make a rough surface — which makes for more turbulence, which supposedly counteracts Bernoulli's Principal. Nonetheless, you can't throw a curve, or slice a golf ball, without an atmosphere. In early June 1994, Shepard was on a Washington DC radio station and he now claims that he "shanked" that ball because a ball can't curve in a vacuum. Since the camera was stationary a shank would have exited the camera's field of view almost immediately. A shank is when the ball skids sideways off the face of the club.

Al, everybody saw it slice on that original tape. If there was air on the Moon why didn't you tell us? If there isn't and that ball was shanked as you claim, then we all need glasses with very thick lenses. Or is it that the tape, your report, and the mission were all simulated?

[29] p. 230, Ibid.

14 THE MANCHURIAN CANDIDATE

In my second year of high school I read extensively about the world's most modern religion. I used both the school and the public library, and after extensive reading purposely chose not to join. I speak here of the religion of psychiatry and its three major sects led by the respective prophets named Freud, Adler and Jung. I eventually came to refer to these men as Fraud, Addled and Junk.

It turned out, that in the dogma of psychiatry, my love of the outdoors, camping, fishing and hunting and shooting, were all pronounced as symptoms of repressed homosexuality by big city boys. My gun was an extension of my penis. Every shot I fired was a sublimation of my sexual desire for men or boys, and for all I know maybe even male dogs.

Naturally, if you searched your soul and failed to find any such feelings, then you were diagnosed as repressing and sublimating. Since I've always cared more about what I thought than what anyone else thought about me, I could easily have swished out of the closet had I been in one.

While the old established religions bore down on the ever popular sins of sex, greed, gluttony, coveting and murder, this new one expounded a new sin: the sin of being mentally sick to one degree or another. To this new religion piety got you nowhere. Everyone was a sinner! I had a little problem with this belief because I felt 1 was being tarred with a very broad brush wielded by big city boys who thought a trout was a used condom floating in the Hudson River and believed a sucker was someone you sold the Brooklyn Bridge to.

So I rejected psychiatry, even though I learned a little of the psychiatric jargon. According to many practitioners, everyone is swept by either the dust brush of neuroses, or by the broom of madness; their basic tenet, of course, is that everyone needs their 50 minute hour ministrations forever. After all, wouldn't we all want desperate customers willing to pay us good money for a couple of hours a week?

A few years ago I heard that magic and most descriptive term "psycho-babbler" which 1 have enjoyed using ever since. Just because I don't believe in the psycho-babbler's particular dogma doesn't mean that I am unaware of mental illness, drug altered states and hypnosis. Like most of us, 1 have become emotionally crazy at times. But, I have also had a few periods, admittedly short, when I was completely sane. I feel I probably know more about both states than the average bear.

I know enough about hypnotism to be absolutely sure that when some expert hypnosis assures you that he can't induce you to do anything against your morals, nor make you do anything you wouldn't ordinarily do, it's time to run like hell. That's simply not true!

1 firmly believe that each of us is capable of doing anything imaginable, given the proper encouragement and setting. Hypnosis is the technique by which a subject's perception and thinking processes are altered by suggestion alone. The stylish fads that periodically ripple through society are examples of the inherent power of suggestion.

In our society one of the biggest single no-nos is killing another human being. For those who like to think they could never k ill I have news for you. We are all installed with belief by the authority figures who formed our EBS (Emotional Belief System) while we were still young and our logic centers were not yet mature. It is not all that hard to start teaching young soldiers how to kill. What governments have always found difficult is to get them to stop after the war is over.

Fortunately, in most people the brainwashing techniques (pioneered by the Chinese using the North Koreans and perfected by the North Vietnamese) wear thin after awhile. I wonder how long it would take a perfect brainwashing job to wear thin on one of the 'Manchurian Candidates', especially if it went against a person's moral code. Even beneficial hypnotic suggestions such as stopping smoking, or other self-admitted bad habits, wear off in time. Imagine how much deeper suggestions, like those that go against your moral grain, must be implanted. How much faster do they erode away? For there to be a life-time of deceit, I believe the subject must finally accept the lie!

Whether brainwashing was used or not, these astro-nots were inducted into NASA's web of lies one at a time and one lie at a time, very carefully. Some of them were West Pointers who supposedly never lied before. Yet, here we have a developing situation which would turn all of them into a pack of the greatest liars the world has ever known.

The only logical reason I can find for Grissom's behavior shortly before the fire is that he had been brain-washed (but it was wearing thin). He had to know that NASA lied, for what ever reasons, about the brilliance of stars and planets in space. This always raises the question that if Grissom was aware that the program was a hoax, why raise a fuss? It's one thing to get mad at shoddy work when your life depends upon it, but it's totally dumb, if not insane, to get mad if you are not in any danger, and are in on the scam.

Grissom was neither stupid nor mad. The dilemma is that he couldn't have known. Yet, he must have known! He had flown twice before. He was the second of our men to probe space during the Mercury Program, and he also flew on the first Gemini mission. After the first flight he came back and told the party-line lie about the dim and fuzzy stars. And, by his silence after the Gemini mission, protected that lie. He didn't know, yet he must have known. This problem defies resolution, unless he had been hypnotically altered and it was wearing off.

Concerning his two flights, both of these missions had to be legitimate because I have found nothing to suggest otherwise. But at the time of the fire he was possibly resisting NASA's not too subtle hints about how true patriots would lie to their fellow citizens for their country.

The fire on Pad 34 was not utter, compound idiocy. It was murder! If NASA had killed other astronauts in a series of strange 'accidents', then that raises suspicion about the shuttle that blew up a few years later. Challenger was the first one to fly with a civilian on board. Did she, a knowledgeable teacher, start to ask too many questions?

If you suspect our astro-nots have been doctored by the psycho-babblers then they crumble from basic heroes into pathetic figures. If you believe they were consciously lying, and lied their way to fame, then they are despicable.

I firmly believe that they are liars, since too many years have passed and not one has come forth to tell the truth. Normally one would expect some of them would have relieved their mental stress by confession; unless, of course, their hypnosis is being continually upgraded and reinforced. Is this far-fetched? Wives, friends and relatives would always be asking questions about the Apollo missions which would tend to weaken the altered state.

It is not as if they committed some heinous crime like murder and no one else knows, allowing them to literally forget the incident. They allegedly went to the Moon and everybody they know must talk about it now and then.

So the question still arises. Were they just bad actors who saw a shot at fame and glory and took it? Or were they Manchurian candidates who, to this day, are still subjected to mind-control by the government? Either way, the choice was bad for everyone concerned. Much better had NASA given the Moon shot a hell of a try and failed, rather then "Mooning America" by deception.

15 SUNSTROKE

This section has been in constant revision from the first day I began to write it during the beginning of December 1992. What was needed was a combination solar physicist, nuclear engineer and medical doctor who specialized in radiation poisoning. Unfortunately, I couldn't find such a person so we are stuck with each other.

I requested the solar data from NOAA (National Oceanic & Atmospheric Administration) for the years of the Apollo missions to the Moon because I hoped to find just one big X-ray and proton exuding flare that took place during any one of the missions. We would have heard about cooked astro-nots, right?

I felt I didn't dare reveal why I wanted this information, so being the clever devil I am, I wrote to the Geophysical Data Center in Boulder, Colorado with an invented story about correlating solar flares with some concise weather records my grandfather had left me. Heh! Heh!

The NOAA people were polite and prompt. Mr. McKinnon sent me some pamphlets and disks with compressed data which my computer couldn't read. I had a friend explode them to find the data columns were over 83 columns wide. However, these columns had no headers. Have you ever seen data columns without headings? Neither have I.

I copied the data for those time periods onto new files to play with. I tried for two long days to locate the columns containing the X-ray data and failed. This column contains only the letters C, M, and X and I should have found it even without the headers. I finally called Mr. McKinnon and bluntly asked for the column numbers for the X-ray and proton data. I was glibly sidetracked and then told that I would receive more information.

While waiting for NOAA's promised package I tried again and again to determine the X-ray data. I finally came to the conclusion that NOAA was a more clever devil than I and had cooked the files. That's difficult to accept because this was scientific data that had little to do with the space shots. It's the sort of data that regularly goes to universities and scientists all over the world, plus to companies that operate air lines, power plants, radio and TV stations and telephone systems.

This premise seemed too far out, so I had to conclude that if the X-ray data was deleted there had to be two sets of data, one that would be sent to scientists and organizations on a preferred list, and the other, sent to casual strangers, like me.

Then I wondered if they eliminated this pertinent data from only those days the astronots were supposed to be in space. We checked the rest of the disks to find that there was no X-ray data. While I tried to get the smoking gun (space radiation data) I proceeded to assemble what I had.

The chart below is a monthly list of all solar flares for a period of 25 years from solar cycles 19, 20, and 21.

MONTHLY COUNTS OF GROUPED SOLAR FLARES

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1967	796	589	1009	694	771	629	907	911	573	946	775	1109	9709
1968	1037	773	519	460	768	697	573	611	616	772	556	640	8022
1969	581	504	669	655	839	694	489	551	540	643	566	422	7153
1970	466	646	578	688	722	836	954	780	811	797	687	667	8632
1971	598	505	387	546	461	430	713	673	518	375	431	394	6031
1972	384	599	621	361	614	541	404	515	371	408	175	210	5203
1973	221	171	410	453	388	270	232	182	353	201	136	163	3180
1974	127	148	79	364	255	204	360	187	270	366	153	81	2594
1975	68	82	69	19	42	85	196	346	68	38	127	25	1165
1976	69	18	180	60	38	48	6	47	57	23	13	55	614
1977	54	77	18	76	64	210	140	140	250	252	107	336	1724
1978	274	588	338	526	330	460	533	346	554	499	418	648	5514
1979	926	781	731	731	907	772	750	821	901	1018	888	786	10012
1980	703	689	621	1092	811	956	763	720	924	988	1027	838	10132
1981	578	782	914	915	658	592	893	982	680	836	773	615	9218
1982	631	766	803	490	553	769	696	753	615	544	564	748	7932
1983	332	220	337	346	609	561	427	389	289	298	88	152	4048
1984	353	461	366	440	492	185	151	161	95	36	92	69	2901
1985	104	29	38	119	129	116	185	53	25	108	19	50	975
1986	51	158	54	56	68	3	71	12	14	174	56	13	730
1987	36	7	52	192	205	61	132	185	172	198	273	114	1627
1988	217	109	413	328	274	551	502	375	513	429	508	584	4803
1989	689	539	658	485	686	971	473	684	699	535	640	507	8132
1990	536	415	664	439	565	433	447	703	436	569	619	672	6498
1991	659	491	625	570	458	573	582	581	425	565	396	544	6469
										Grand Total			134793

A fast scan of the chart shows that the ideal year for venturing into space and gamboling on the Moon was 1976 which had only 614 solar flares. However, even during such low emissivity times there is a danger. Immense proton and X-ray emitting flares can, and do, erupt even during the low portion of a solar cycle, as shown by the tremendous series of flares during August 1972.

The accepted theoretical apex of Solar Cycle 20 was from December 1968 through December 1969. During this period Apollo missions 8, 9, 10, 11 & 12, allegedly left the protection provided by the Van Allen Belt (shield) and entered lunar space.

Further examination of the monthly chart showed that the individual solar flares are basically random occurrences, and are superimposed on the 11 year solar cycle. Nonetheless, there can be a high flare count for short periods, even during the low in the cycle. There can be a low count for short periods during the peak, but the point to remember is that extremely powerful flares can randomly occur at any portion of the cycle.

During the era of the Apollo missions (1969 to 1972) , there were 27,019 flares or 19 storms a day so I decided to run my own imaginary contest to see which Apollo team of astro-nots would win the booby prize for being zapped by the highest number of flares while in space. Traveling at 26,000 mph, a mission to the moon spends only minutes under the Van Allen belts. Then the astro-nots spend about an hour in the belts' regions where the higher radiation is trapped (see The More On Space Radiation addendum). Although the higher radiation here serious, it is miniscule compared to what is released by one big solar flare.

By dividing the number of flares in a month by the number of days in that month I found the average number of flares per day. Then by multiplying that average by the number of days in a mission I found the total average flares per mission.

The chart below lists each Moon mission, and the average number of flares each day of that period. It also lists the total number of flares each team of astro-nots were never exposed to while not flying to the Moon. Just like you can't get a tan in a subway, you can't get dosed if you aren't in space.

ASTRO-NOTS RADIATION EXPOSURE

Mission	Dates	Days in space	Total flares in month	Average per day	Trip Total flares
Apollo 8	12/21 to 12/27 1968	6	640	20.64	123.8
Apollo 10	05/18 to 05/26 1969	8	839	27.06	216.5
Apollo 11	07/16 to 07/24 1969	8	489	15.77	126.2
Apollo 12	11/14 to 11/24 1969	10	566	18.86	188.6
Apollo 13	04/11 to 04/17 1970	6	688	22.93	137.6
Apollo 14	01/31 to 02/09 1971	10	551	18.69	186.9
Apollo 15	07/26 to 08/07 1971	12	693	22.35	268.2
Apollo 16	04/16 to 04/27 1972	13	361	12.03	156.4
Apollo 17	12/07 to 12/19 1972	12	210	6.77	81.2
	Total	85			1485.4

Note: on dates that extend through two months the numbers for both months were averaged.

My personal "Most Flares Avoided" award goes to the Apollo 15 team composed of astro-nots Dave Scott, Al Worden and Jim Irwin. They won hands down. I'm tempted to

become somewhat sarcastic about this mission. However, Jim Irwin paid a severe price in mental stability for his "fame and glory" before he died, so I will hold back on the sardonic comments here. It seems Irwin was in touch with Bill Kaysing just before he died. I like to think that maybe he was about to 'fess' up when he had his fatal heart attack on August 8, 1991. Heart attacks, especially for middle-aged men, top the list whenever any covert agency wishes to silence someone who has become an 'enemy' of the state. The reasons may be specious or even false, but that doesn't seem to deter them. Nor does it seem to bother citizens who are "law and order" monomaniacs. Their numbers are now legion. Witness the popularity of TV shows that glorify flagrant violations of our Constitution by the police, etc.

As far as the all the other Apollo astro-nots are concerned, I'm sure I received more radiation from my CRT computer screen in writing this book than they ever received from the 85 days they weren't in lunar space. In that same ostensible time period if you use the grand total of 134,793 flares from the first chart, then 1485 flares burned their way across the Sun. They never received a dose of radiation. Amazing!

In the meantime, the special information promised by NOAA arrived in the form of a book and a user's guide to the data. The guide provides the format for data after 1975 so it was almost useless for my purposes. It did however help to give me a small education in solar flares. The book, NOAA TECHNICAL MEMORANDUM ERL-22, was written by J. A. McKinnon, a NOAA expert on solar flares. The book's subtitle is August 1972 Solar Activity and Related Geophysical Effects , and specifically details the effects of an immense series of solar flares that occurred from 8/2/72 through 8/11/72. These flares, the most spectacular series of solar flares in the twentieth century, originated without warning from a region of the Sun known as 331.

McKinnon begins his book with this statement, "In early August 1972, a series of solar flares from one region on the sun's disk made national news. The geophysical effects that followed reaffirmed to laymen and scientists alike that the sun can act as a formidable source of radiation."[1] Wait a minute! Didn't the Russians try to tell NASA that in 1963?

Mike Collins also told us that the flares were predictable in July of 1969. During the years of the Apollo missions those long range (27-day) forecasts that NOAA provides, mostly to communication and power companies, were about as accurate as a 27-day weather forecast by NOAA. On July 19, 1972 the long range forecast read, "27 day forecast for 20 July to 16 August 1972: No significant increase in solar activity is expected." On August 2, 1972 it read, "Forecast for 03-09 August 1972: Solar activity is expected to remain at a low to moderate level."[2]

McKinnon, the government expert, writing some years after the Apollo 11, has this to say about NOAA' predictions: "The activity from region 331 was not covered in any long-

[1] p. 1, NOAA TECHNICAL MEMORANDUM ERL-22, McKinnon, Dec, 1972, Dep. of Commerce
[2] p. 28, Ibid.

range forecasts."[3] The words 'not covered' mean simply in plain English that the long range forecasts completely failed to predict them.

The short-term forecast at 2200 hours on August 1, 1972 claimed the average probability for the severe class X flare as 7 %. For a proton event it was 9 %.[4] Yet less than 4 hours and 50 minutes later solar Region 331 produced its initial major flare. It was the first in a series that culminated in a 5 day period producing the greatest solar activity recorded in this century. And that, despite the fact that the Sun was near the minimum of its cycle. What now can we make of Collins' statement that NASA had a way to protect the Apollo astro-nots from solar flares when they were in space years before. Even NOAA's next day forecasts made during the actual event were understated.

Speaking of solar flares in general, McKinnon says, "A probability of 10-20% should be considered a low probability for class M events,..."[5] In plain English he is saying that even at the bottom of the cycle, one flare in five is large enough to emit M (medium) strength X-rays.

Mckinnon continues, "Probabilities of the order of 1% are considered low with respect to class X flares."[6] X rated flares are the strongest. Proton events are also extremely hazardous to anyone outside the Earth's Van Allen Belt. It seems that protons and X-rays travel well under the speed of light. As far as warning goes, the X-rays begin to bombard Earth within an hour of generation. Some of the more energetic protons can make the trip in 38 minutes.[7] This means an even shorter warning time.

Once in space, even if NOAA could issue an early warning about major solar activity, what could the astro-nots do about it? Get into their fabric suits and hide behind the tissue-paper-thin walls of the command module and LEM? According to John Wilford the SWIP program (Super Weight Improvement Program) whittled the outer skin of the LEM until it was, "about the thickness of heavy-duty aluminum foil..."[8]

Despite all the weather stations and their modern equipment, radar, satellite observations, etc. any realistic meteorologist will admit that weather forecasting is still more an art than a science. Frequently it seems mostly inspired, intuitive guesswork when it turns out to be right. It seems the Old Farmer's Almanac, prepared a year in advance, is just as accurate as the 29-day forecast. Would you bet your life on tomorrow's weather forecast?

Solar flare prediction, of course, is not even as accurate as a weather forecast. By actual measurement, heavy-duty aluminum foil is a little over one thousandth of an inch. Would you want to bet your life on next weeks solar forecast while hiding behind such walls?

[3] p. 28, Ibid.
[4] p. 51, Ibid.
[5] p. 29, Ibid.
[6] p. 29, Ibid.
[7] p. 29, Ibid.
[8] p. 155, WE REACH THE MOON, Wilford, 1969, The New York Times

The following quote is from Prospects for Intersteller Travel by John H. Mauldin. The author worked for NASA on the Voyager missions, has a Masters in physics and a Ph.D. in science education. He writes:

> "By comparison, solar flares can deliver GEV protons in the same energy range as most cosmic particles but at much higher intensities. Increase of energy accounts for most of the increased radiation danger because GeV protons or their products will penetrate several meters of material." Mauldin goes on to say that, "Cosmic particles are dangerous, come from all sides, and require at least 2 meters of solid shielding around all living organisms." Mauldin then states, "Solar (or star) flares of protons, an occasional and severe hazard on the way out of and into planetary systems, can give doses of hundreds to thousands of rem over a few hours at the distance of Earth. Such doses are fatal and millions of times greater than the permitted dose. Death is likely after 500 rems in any short time, ..."[9]

I wonder if NASA told the astro-nots that? Perhaps now, NASA will claim that lead-lined shielding was carried on the LEM. Perhaps such mythical lead coffins were the real reason why they patiently scraped away layers of mylar to lighten the capsule? And if the LEM had lead coffins wouldn't the command module have needed to carry three more? Did they transfer two of the coffins back and forth?

It wouldn't matter if the shielding material was made of lead or not. Radiation shielding depends mostly on the mass and density of the material that is between the source and the victim. Lead is effective because of its high density. On an equal weight basis a layer of water is even more effective, despite its lighter mass, but lead is less bulky.

Never mind, NASA had no need for lead coffins because according to them, "The TMG (thermal-meteoroid garment) part of the suit assembly also shielded them against those high-energy nuclear and electromagnetic particles that speed throughout the universe and would have a deadly effect when they strike human tissue if there were no atmosphere to slow them down and stop them."[10]

Wow! First of all the Van Allen Belts are the primary shield, and this NASA suit space fairy tale is a thing of beauty. If a dozen layers of ultra fine spun glass cloth, doped with silicon rubber, some aluminum threads and a coating of teflon can stop particles that may be up to 2 gigavolt (2 billion EV), then imagine what they could do in an atomic reactor where the particle energies are below 18 megavolts (18 million EV). Why one could romp around in Three Mile Island's melted down, still hot, reactor all day long in such a splendid garment.

There is another anomaly in the data on radiation. The engineering physics department of the Royal Aircraft Establishment in Great Britain requires that any dosage in excess of

[9] p. 225, PROSPECTS EOR INTERSTELLAR TRAVEL, Mauldin, 1992, American Astronautical Society
[10] p. 229, SUITING UP FOR SPACE, Mallan, 1971, John Day Co.

10 millirems per hour calls for a lowering of altitude on the SST transport (Super Sonic Transport). This plane normally cruises at an attitude of 65,000 feet on great circle routes over the pole. Should the dosage approach 100 millirems then they must change their flight plan and avoid the polar route entirely.[11]

The SST is the air transport of choice for the rich and powerful. A hundred millirems, which is equal to .l rem, is considered too much for them to bear. Whoever designed the chart below must believe that the poor and powerless are similar to cockroaches in their ab ility to harmlessly absorb huge amounts of radiation. Folks who can't afford to fly the SST can take 100 rems with no real harm done. But that's OK. The men with "The Right Stuff can take up to 150 rems.

Because of the SST rulings and Mauldin's flat statement death is likely at 500 rems I find the chart shown below, from McKinnon of NOAA, a little beyond the limits of belief.[12]

Acute Dose (rems)	Expected Effects of Acute Whole-Body Radiation Doses
0-60	No obvious effect, except possibly minor blood changes.
100-150	Vomiting and nausea for about 1 day in 5 to 10 percent of exposed personnel; fatigue, but no serious disability.
160-210	Vomiting and nausea for about 1 day, followed by other symptoms of radiation sickness in about 25 percent of personnel; no deaths anticipated.
220-270	Vomiting and nausea for about 1 day, followed by other symptoms of radiation sickness in about 50 percent of personnel; no deaths anticipated.
340-420	Vomiting and nausea in nearly all personnel on first day, followed by other symptoms of radiation sickness; about 20 percent deaths within 2 to 6 weeks after exposure; survivors convalescent for about 3 months.
500-620	Vomiting and nausea in all personnel on first day, followed by other symptoms of radiation sickness; about 50 percent deaths within 1 month; survivors convalescent for about 6 months.
690-930	Vomiting and nausea in all personnel within 4 hours from exposure, followed by other symptoms of radiation sickness; up to 100 per-cent deaths; few survivors convalescent for about 6 months.
1200	Vomiting and nausea in all personnel within 1 to 2 hours; probably no survivors from radiation sickness.
6200	Incapacitation almost immediately; all personnel will be fatalities within a week.

[11] p. 15, NOAA TECHNICAL MEMORANDUM ERL-22, McKinnon, Dec, 1972, Dep. of Commerce
[12] p. 17, Ibid.

This table must have been concocted by the same governmental geniuses that stationed US troops close to ground zero at those early A-bomb tests in Nevada. Those explosions were as powerful as those used in Japan. But then, after the burst, they had them charge toward ground zero without any protection. Ah, well, if we can believe this chart you and I have no real worries about a dose almost 1000 times higher than the allowable limit for SST patrons.

From page 4 through 14 in McKinnon's book there is a tabular chronology of these events including a series of small tables to show the accumulating doses that astro-nots might have received had they been on a mission during this period. One table shows skin and organ dosage, and is further divided into other columns showing the shielding provided by the suit during a Moon or space walk, the radiation absorbed inside the LEM and inside the command module.

Apollo Radiation Hazard (rems)

	August 2, 1972			August 3, 1972		
	Space Suit	Lunar Module	Command Module	Space Suit	Lunar Module	Command Module
Skin	3	0	0	9	1	0
Depth	0	0	0	0	0	0
	August 4, 1972			August 5, 1972		
	Space Suit	Lunar Module	Command Module	Space Suit	Lunar Module	Command Module
Skin	2397	1082	316	2899	1236	341
Depth	85	68	32	88	70	33
	August 6, 1972			August 7, 1972		
	Space Suit	Lunar Module	Command Module	Space Suit	Lunar Module	Command Module
Skin	2995	1264	344	3052	1285	348
Depth	89	71	33	90	72	33
	August 8, 1972			August 9, 1972		
	Space Suit	Lunar Module	Command Module	Space Suit	Lunar Module	Command Module
Skin	3321	1356	356	3416	1370	357
Depth	90	72	33	90	72	33
	August 10, 1972			August 11, 1972		
	Space Suit	Lunar Module	Command Module	Space Suit	Lunar Module	Command Module
Skin	3421	1371	357	3765	1388	358
Depth	90	72	33	90	72	33

Had the astro-nots been in the command capsule in space during this 10-day period, their skin would have absorbed 2,780 rem. Their whole body radiation would have amounted to 263 rem. This is arrived at by simple addition of the numbers in the chart. McKinnon on page 14 somehow claims that they would have had only 33.9 rem. Their skin would have taken 358 rems but according to the information Mr. McKinnon was given this too would have presented no problem. He has this to say about skin dosage, "Acute dose to skin of 1000 rems produces itching and reddening."[13] Then he adds to this statement, "3000 rems to epidermis is sufficient to cause severe radiation burns requiring skin grafts."[14]

Forgive me, but something is very wrong here. Mauldin needs 2 meters (6 feet) of shielding, but NASA tells you that the walls of the space craft block most of the radiation. Frankly, I don't believe that the tissue paper thin walls (so to speak) of either the LEM or command capsule provide the protection that is reflected in McKinnon's tables. I don't believe his "Whole Body Radiation Chart". The chart must be from the AEC (Atomic Energy Commission), but the data on the radiation shielding is from NASA, and both of these agencies are two of the most untruthful and ax-grinding bureaucracies in existence.

I knew that somewhere I had read that 170 rems is dangerous and almost guarantees a cancerous future. I searched and searched and finally found the source. Much to my surprise it wasn't 170 rems but 170 millirads. which is equal to 170 millirems. This dosage is one thousandth of 170 rems.[15]

No wonder the SST aborts its flight plan at 100 millirems. Mc Kinnon's chart shows the lowest category to be 0 to 60,000 millirems (60 rem), and claims it is harmless. And the other chart now shows that on August 4, 1972 a man in a space capsule would have had 32,000 millirems (32 rems) of exposure.

During the Gemini 10 mission, when Collins didn't walk in space (or else why did NASA doctor the pictures?), he reported that he received .78 rads during the first 24 hours in space. He called this an insignificant dose.[16] NASA reported no major flares so I must assume that there were none, but that was for less than an hour outside the ship. All the Gemini missions stayed beneath the Van Allen shield and also spent half their time in the Earth's shadow. Still they received the 'insignificant' dose of 780 millirems. That's almost eight times as much as it takes to send an SST streaking for cover. One wonders what daily dosage would be received by astronauts if they were really on their way to the Moon?

Mauldin tells us that, "The permitted dose for people is about 0.5 remlyear,..." And he also states that, "The average cosmic radiation in local space is about 10 rem/year.. ."[17]

[13] p. 8, Ibid.
[14] p. 10, Ibid.
[15] p. 126, POISONED POWER, Gofman & Tamplin, 1971, Rodale
[16] p. 99, LIFTOFF, Collins, 1988, Grove Press
[17] p. 225, PROSPECTS FOR INTERSTELLAR TRAVEL, Mauldin, 1992, American Astronautical Society

This is exactly twenty times higher than we normally receive from our environment. I must assume from all the recent reports that even this low a dosage may lead to a cancerous future.

Collins reported, "As a bonus, Orbiter confirmed that radiation levels near the moon were low . . ."[18] Again, I wonder! How could the radiation levels near the Moon be any different than the rest of near space? In fact, since all the Moon trips were allegedly made during the New Moon, the radiation levels should have been higher, since the Moon is closer to the Sun during that period.

Now for two relevant questions. Why haven't some of the astro-nots been stricken with cancer and leukemia, like people who were near Chernobyl? Mr. McKinnon, why has it been harder than pulling a gorilla's tooth to get the solar data I requested; particularly if even a series of giant flares cannot harm our astro-nots as you wrote in your TECHNICAL MEMORANDUM?

But wouldn't you know it? I later discovered that another big flare started on April 17, 1972 when Apollo 16 was only one day out from Earth on the way to the Moon.[19] Astro-nots Young, Mattingly and Duke should have been fried, but, of course, they weren't. In addition to this, the two that landed on the Moon spent over 20 hours outside the LEM in the searing sunlight and radiation from residual flares. NASA never told us about that one either. I wonder how many more solar flares there were while other missions were allegedly in space?

Beginning in 1994 I wrote to McKinnon again and bluntly demanded the real solar data on every day that the Apollo missions were in space. This time Mr. Ed Erwin, another NOAA employee replied and his letter explained that the original data I was sent was optical data, hence did not contain the X-ray data. I had specifically asked for the X-ray data. He promised to send me the data and he did, but wouldn't you know, a funny thing happened on the way to my door.

Some mail person diagonally bent in half the large envelope near one of its corners. This was ostensibly done to stuff it through the mail slot even though it had "DO NOT BEND" stamped all over it. The final irony was that Murphey's Law struck again. The bend was made across the center of the hard-cased 3.5 inch floppy disk it contained. It takes real determination to bend a 3.5 inch disk and crack the shell. Equally determined, I was able to press it flat. To my amazement my computer was able to read the files it contained.

The Post Office (privatized in the '70s) has done more damage to me than any other government entity. I found out years later that while I was in Florida, because I tried to use book rates, they never delivered half of the 100 science books I mailed out for review.

[18] p 118, LIFTOF, Collins, 1988, Grove Press
[19] p. 51, ON THE MOON WITH APOLLO 1, Simmons, Dec, 1972, Dep. of Commerce

That is why I use PriorityMail today.[20] They have even soaked two of my NASA books in a basin of water. Over the years many NASA books haven't been delivered. Recently, a check was stolen and the case of a video being sent to me was crushed. I finally threatened to sue them as a private corporation. I told them that my first interogatory would demand to know the actual owners. Most of my mail gets through now. But what else can you expect from an entity that is now owned by our old friends the International Bankers?

The disk only contained columns of numbers without column headers. Do you think that this might be just another example of bureaucratic obfuscation? To this day I have never received the data in useable form. What they have done is to express the particle strength as a matter of momentum. My question now is "How much deadly radiation will you receive if you are struck by a one ton asteroid traveling at 60,000 mph?"

Reading that disk caused a funny thing to happen to the files for this book. My computer developed a disease that wrote DOS into all files that had the word NASA in them. It cost four days of effort, but I was able to rebuild them. We scanned for viruses without success, but it seems strange that out of 40 megabytes on my disk only the 800,000 bytes concerning this book were scrambled. I will always suspect that they were singled out intentionally. DOS only writes once when you install it. After 16 months of backing and forthing over the X-ray data I am beginning to get the feeling that the government is a more clever devil than I am.

I found a technical book entitled Astronautical Engineering and Science published by McGraw-Hill in 1963. It was a tribute to Wernher von Braun and written in sections by many of the original NASA experts. This book is divided into four subject areas and each area is then subdivided into various topics.

The one of interest here is entitled "Problems in Radiation Shielding of Space Vehicles" co-authored by Keller, Shelton, Burrell and Downey, four NASA experts. On page 244 they describe the problem, "Space explorers will be concerned with great radiation belts upon leaving the Earth, with the background of cosmic radiation that pervades all space, with the violent particle radiation storms associated with solar activity, and with the radiation belts around planets to be visited."

On page 253, a chart lists the shielding effects from various materials. I was surprised to see that water is one of the more effective shields. The chart shows the various amounts of material necessary to stop the primary protons at their different energy levels. Their chart shows that stopping a 10 MEV (million electron volts) particle requires 10 cm of water, for a 25 MEV particle you need 25 cm of water, and a 50 MEV event seems to call for 90 cm. The first two are not very energetic particles because the Sun emits particles of several BEV (billion electron volts). By contrast, a working atomic reactor emits particles in the 18 MEV range.

[20] I have stopped using Priority. Now I insure it and hope they lose it!

On page 256 of Astronautical Engineering and Science, there is a chart that shows the dosage of four different flares. On August 22, 1958 there was a low energy flare that could have been reduced to 25 rem per hour with 2 cm of water shielding. On May 10, 1960 there was high flux, low energy flare that would have needed over 36 cm of water to reduce it to 25 rem per hour. There was an intermediate energy flare on November 12, 1960 and it would have required 18 cm of shielding to reduce it to the 25 rem per hour. A high energy event happened on February 23, 1956 which would have required over 35 cm (12-inches) of shielding water to bring it down to 25 rem per hour.

When the Apollo capsule's internal pressure rose to 29 psi (14 psi over atmospheric) during the Grissom-Chaffee-White fire, it ruptured. The walls were too thin to withstand the 14.7 psi required to hold a normal atmosphere and therefore, couldn't have been much thicker than the LEM's hull walls. In fact, even if the command capsules walls were .01 inches thick they would have been 10 times the thickness of the LEM's and still, they would be 50 times thinner than the one centimeter hull used in the above charts.

Even if the flares, which took place during the Apollo 14 & 16 missions, were only of intermediate intensity, the astro-nots should have been doused with 70,000 rem. The actual hull was only a little over one thousandth of an inch thick. So what stopped the radiation? The suit material?

To sum up we have McKinnon, the governments own expert, telling us: "A probability of 10-20% should be considered a low probability for class M events, ..." Only a large flare can be a class M which a medium X-ray emitter event. He also says that at least 1 % will be the deadliest of solar storms, Class X.[21]

In the first chart in this chapter, on page 162, there is complete list of the flares for 25 years. The total number of flares for the period is 134,793. This averages out to 5,391 flares per year or 14.76 per day. The Apollo astro-nots spent a total of 85 days in space. Thus during that period of time the average number of flares that could be expected was 1254. If we use chart number 2, which contains the monthly totals for these same periods of time, we find the total to be 1485 flares. This increase is expected because the trips took place at the high end of that solar cycle.

To send all these missions to the Moon without reporting severe radiation problems, NASA is effectively telling us is that not one flare emitted heavy X-Rays or protons during this time period. But McKinnon's probability of 1 % would mean, at least, 13 super deadly flares of X rated capacity or over one per mission. In addition they should have been exposed to 268 M class (medium) flares which is 1/5 of the total number. M class flares are also deadly without the 2 meters of shielding. Referring again to the chart on p. 256 of Astronautical Engineering... we see that any hull of one cm thickness would have allowed 70,000 rem for each intermediate flare into the module and many times more from an X-rated flare.

[21] p. 29, NOAA TECHNICAL MEMORANDUM ERL-22, McKinnon, Dec, 1972, Dep. of Commerce

Mauldin states: "Cosmic particles are dangerous, come from all sides, and require at least 2 meters of solid shielding around all living organisms." "Solar (or star) flares of protons, an occasional and severe hazard on the way out of and into planetary systems, can give doses of hundreds to thousands of rem over a few hours at the distance of Earth. Such doses are fatal and millions of times greater than the permitted dose. Death is likely after 500 rems in any short time, . . . "[22]

Since the whole capsule was only 13 feet in diameter, 2 meters (6 feet) of hull on each side would have left a space in the center about 1 foot in diameter. Therefore all 27 of the astro-nots who went to the Moon should be dead from radiation. Yet, all lived to tell the tale. Were they protected by miracles?

I also find it very suspicious that Aldrin spoke of space radiation only once in his last book. He is refering to the Gemini 3 mission, well under the Van Allan shield, when he writes, "As the crew began testing the effects of weightlessness and radiation on biological samples, ..."[23]

There's one more interesting tidbit that I ran across. Just before re-entry, the standard procedure on all the Apollo missions was to send the service module on a trip toward the Sun. Mr. Hurt summarized it this way, "... Mission control reprogrammed the rocket's remains to veer away from the Moon and enter solar orbit to be burned up by the heat of the sun."[24]

At first I believed that this statement meant that the module was sent into the Sun. Before one can send a module into the Sun (literally by braking the rocket so that it slows down enough to fall into the Sun) you must know its current attitude and the direction of its axis. How did they know this after uncoupling? Did the service module have its own Inertial Measuring Unit? Its own computer? And where did all that extra fuel come from? Did NASA really aim a metallic shell about whose atoms we know little, into a Sun about which we know less, to produce an effect about which we know nothing?

The previous statement was a paraphrase of a statement Voltaire made in speaking about doctors. "We put drugs about which we know little, into bodies about which we know less, to cure diseases about which we know nothing."

Some heterodox scientists believe that some solar flares are triggered by meteorites that crash into the Sun. If this is true, would a small metallic shell mass be enough to cause the Sun to burp? There's an even worse possibility. Could the spectacular solar storms of August 1972 have been generated by a service module of a previous mission hitting the Sun? It's more likely to have been sent into a solar orbit — part of the accumulating space debris that NASA now admits is an increasing problem. However, if this was the case, how

[22] p. 225, PROSPECTS FOR INTERSTELLAR TRAVEL", Mauldin, 1992, American Astronautical Society
[23] p. 126, MEN FROM EARTH, Aldrin & McConnell, 1989, Bantam
[24] p. 74, FOR ALL MANKIND, Hurt, 1988, Atlantic Monthly Press

could Skylab's heat build-up have been a surprise? Does this mean that one branch of "Never A Straight Answer" doesn't even tell its other branches the truth? Hell, do any of our bureaucracies even know the truth any more?

15.1 ADDENDUM

Regarding damage to living things we find the following passage in Mallan's book. "But on much longer, later flights in earth-orbiting satellites, bacteria, seedlings, and insects showed remarkable changes caused by radiation strikes in combination with weightlessness."[25] He goes on to describe some of the mutations but swallows NASA's explanation that these effects don't count because the insects have much shorter life spans than people. If this was true how can they explain the incredible capacity of the cockroach to absorb radiation? All of these flights stayed well below the Van Allen shield. This book was published in 1971 when there were still a couple of Apollo missions left to do. Why wasn't this ever spoken of in the popular press or on TV. When did these findings change? How could lack of gravity affect the genes of bacteria, seedlings and insects?

When Mallan speaks of longer flights they are all less than a week in duration. What happened to all the humans who orbited for much longer periods of time? Many of them were still young enough to have had kids. Did NASA intentionally release more genetic time bombs into the gene pool? What amounts of radiation are the shuttle people absorbing.?

A dosimeter is worn by every astro-not and I have never seen any data about the absorbed REM from even the shuttle people, let alone the Apollo astro-nots, who didn't have the protection provided by the Van Allen shield. I now know that on very high altitude flights aircraft skins accumulate radioactive particles which are dangerous to those who contact them. What dosage is on the shuttle skin? Do we ever hear anything about that?

[25] p. 172, SUITING UP FOR SPACE, Mallan, 1971, John Day Co.

16 BY INVITATION ONLY

Shortly after I started writing this book, NASA sent me, believe it or not, a special invitation to attend one of a series of six national "town meetings" scheduled over the course of six weeks. I drooled at the opportunity to ask a few direct questions. However, whether by plan or accident, that invitation was a day late and a dollar short as the old bromide goes. I received it at my home in New Jersey on November 23, 1992.

The "town meetings" were scheduled to be held on the following dates:

Raleigh, NC	November 09	Hartford, CT	November 17
Indianapolis, IN	November 20	Carson, CA	December 03
Tampa, FL	December 11	Seattle, WA	December 16

Unfortunately NASA used my previous address in Florida. Forwarding the letter by the post office as shown by the date on the forwarding stamp, took an extra 2 days. The letter was first postmarked on November 17th. That date precluded my attending both the Raleigh or the relatively close Hartford "town meetings." Since I wasn't about to fly to Tampa (on Florida's west coast) for a NASA "town meeting", I missed the opportunity of causing them an anxiety attack.

Then, I glanced at the date of their letter and really got angry! The letter was dated October 13th! I responded with a letter to Goldin, NASA administrator, complaining about the fact that their invitation lay buried somewhere for 36 days. What I asked for (sort of a consolation prize) was a copy of the picture found on the cover of this book. In due time I received a reply from Douglas Isbell, who sort of apologized, but complained about some of my language. I had dared to call the jerk who failed to mail the letter for 36 days a "lazy person". Isbell never did send me the picture.

If my invitation was typical, then NASA stacked their "town meeting" by inviting only those who they felt were NASA believers and sympathizers. However, on May 27, 1993, I did receive a full size, 64-page NASA brochure titled "1992 TOWN MEETINGS" and subtitled "Toward a Shared Vision." These "town meetings" were created to share NASA's public relations' pipe dreams with the people.

The pamphlet showed that the meetings were more on the order of propaganda conventions than "town meetings". I say this because of the preponderance of highly favorable

quotations from participants scattered liberally throughout the booklet. The first thing we find is a message from Daniel S. Goldin, NASA's administrator, to the effect that the meetings were a "resounding success."[1]

A few pages later, is a statement to the effect that once again the tail has wagged the NASA dog.[2]

> "Goldin ended his talk by outlining the underlying rationale for the NASA vision that has emerged from the Agency's employees. This rationale has four major themes:
>
> "NASA exists to inspire people and serve as a source of intellectual nourishment. From a practical standpoint, NASA and its programs are an ideal vehicle to enliven education. From a more philosophical standpoint, the desire to explore and conquer the unknown appeals to a basic component of human nature.
>
> NASA exists to provide hope that the future will be better than the past. A hope that our children and grandchildren will enjoy good health, a clean environment and a prosperous society.
>
> NASA exists to create economic opportunity, because technological advances are a key way to create new products, new industries and new jobs. And this opportunity should exist for all people, from all cultural and ethnic backgrounds.
>
> And finally, NASA exists to serve as a catalyst for peace in the post-Cold War world."

Following the information was that NASA had its very own cable TV station called NASA Select.[3] They also put out recorded radio broadcasts. I also received a total shock when the results of their propaganda convention revealed that although NASA was wonderful, the hand-picked attendees biggest criticism was that NASA is not quite bold enough. They wanted more Apollo-type missions! An overview followed praising the positive results of the "town meetings", accompanied by a NASA promise to do even more with our money in the future.

Then I discovered a strange piece of information which declared that NASA plans to review its patents and licensing procedures.[4] The idea of our own government's bureaucracy spending our tax money to develop something, but then withholding it from us by license and patent, is totally obscene. Patents were intended to help individual inventors profit from their creations, not to give governmental monopolies.

The brochure then went on with a synopsis of each of the meetings. And guess what? Buzz Aldrin himself made a public appearance and questioned the NASA panel. The ques-

[1] p. 5, 1992 TOWN MEETING, NASA, 1992, NASA
[2] p. 9, Ibid.
[3] p. 15, Ibid.
[4] p. 24, Ibid.

tion that comes immediately to mind is, "Why wasn't he on the panel where he could be questioned?" Maybe his questions were pre-arranged "soft balls".

Parenthetically, there are 27 pictures in that book and the administrator is on ten of them. Not being familiar with corporate blurb, I can't tell whether this is just 'par for the course' or simply because he's so photogenic.

Surprisingly there was not a word about Moon bases or Mars missions. Just a lot of politically correct social statements. The last time NASA ripped us off they told us they were the "Space Agency". Now they are social workers. Looking back at their "rationale" printed above, those paragraphs are hardly the reason for being an agency, presumably on the cutting edge. Also, when the administrator speaks of the "Agency's employees" does he maybe mean the CIA, which is often referred to as "THE AGENCY"? I personally believe that administrator Goldin, or any other NASA pooh-bah who is so interested in things social, should be transferred to a job running the welfare bureau.

However, to give the NASA devils their due, they actually did print a few of the adverse comments made. Someone complained that exploring space should be delayed because there are so many social problems at home. Goldin responded, mat he was sympathetic to such feelings, but concerned that they ignore the importance of NASA's role in creating "opportunity for the future. Imagine that. He forgot to mention a well know previous agenda: a "Man on Mars" at a projected cost of around a trillion dollars.

Consider, just by reducing our federal taxes, the amount of the current NASA budget of 14 billion would be a great start at healing many of our social problems. I speak of building more prisons, reducing the homeless, etc. Economic slavery and social problems are almost synonymous.

Now that I have been educated by my readers I see that half the people in prison are there for taking drugs and are serving manditory sentences. Many real criminals are walking free because they became "snitches" for the power structure.

Another person questioned whether NASA was beginning to sound like Star Trek? Never mind that the production techniques were similar, at least Star Trek was entertaining, and didn't cost us forty billion bucks.

A civilian scientist complained that a new space station would be too costly for the science it could accomplish. I strongly doubt that the sauna called Skylab accomplished anything. If the Russians have told the truth, their MIR ships have a lot of experience at living in space and should probably be duplicated. Fortunately, Congress killed the space station in November 1993.

In large print filling the entire inner margin of "the invitation" is a comment complaining about NASA's attempt to become another social service bureaucracy. Also, one engineer displayed a carabiner clip for climbing, he bought at a sporting goods store for $20. He

complained that the same clip costs NASA $1000. The administrator ignored this question, of course. This engineer apparently didn't understand that this is the method by which secret funds are accumulated. This purchase would bring back about $900 in cash to be spent on secret budgets or to be pilfered.

Another man called the space station a dud, and another predicted that it would take over one hundred years before a space colony could survive. A woman, trapped in poverty, rightfully complained that the space program is not real to the homeless and other low income people. But, hey, it wasn't "real" to Buzz Aldrin either.

Found on the inner margin of another page is the surprising, but anonymous quote, "The many self-serving statements regarding NASA's mission and achievements serve to highlight my misgivings about the status of the agency. In particular, flights of fancy regarding resources and benefits that might accrue from human, Mars, moon and asteroid exploration are not founded in science." Reprinting such comments, by NASA, may make them seem open and above board. But beware, their Mars agenda is still paramount.

Similarly, a large print, top to bottom inner margin, comment made by another detractor said, "As long as there are so many Americans who can't afford health insurance, who don't have a home, who don't have sufficient [food] to eat, I think sinking money in NASA is a crime against this nation."

I'll second that! Especially since the original forty billion bucks spent during the 1960's never got us to the Moon, or even out into real space. I wonder what all those critics will say about NASA after they read and understand the information in this book? Will we stand idly by while NASA "goes" to Mars? Of course, we need another federal social agency like another hole in our heads!

There is a federal law that explicitly prohibits the use of funds appropriated by Congress for the purposes of lobbying. It is found in Sec. 1913, Title 18, U.S.C. But if the government book, America At The Threshold is not lobbying, what is it? If these, by invitation only TOWN MEETINGS weren't lobbying, what is? Is that cable TV station they own authorized by legal exception? And the radio broadcasts? And if the NASA info-mercials propagandizing their new "Martian Adventure" that are frequently being broadcast on TV isn't lobbying, what the Hell is it?

The entire upper echelon of NASA should be indicted under law, and many other laws too. I hope this book sparks a Congressional investigation into all the suspected fraud, theft, arson and murder!

Note: The only thing this book sparked was a budget reduction to almost zero in May '95. That was accomplished by mailing copies to any Congressman that seemed rebellious. As I write these words, NASA has been stone broke for over a year and nothing has changed. It did prove that the private owners of the FED are supplying immense funds to NASA. That also explains the source of the CIA's funding all these years and why the CIA is their private tool.

17 GOTCHAS!

On Sunday, July 24, 1993 — the anniversary of the safe return of our Apollo 11 "First Men on the Moon" intrepid astro-nots — this manuscript was complete, awaiting only make up and review of the galleys. I awoke, as usual, with the first light of dawn and a distinct feeling that something needed doing besides the obligatory bathroom visit. I obliged the bathroom but couldn't go back to bed where I felt I really belonged. Something was nagging my mind.

I staggered to my meager collection (four books) on space flight fairy tales and methodically poked through them in an aimless fashion. I was trying to find out why my hunch button was zinging since I hadn't even looked at any of them for over a year. The last one to be finger flicked was a coffee table book called FOOTPRINTS ON THE MOON published by the Associated Press in 1969. It has 200 large size, glossy pages, uses extra large type and is a typical coffee table book containing scads of full color pictures.

When I reached the end of this book, I began another flick-through. When, nothing happened, I skimmed through it again. Then I finally recognized what I had been searching for. That search triggered all the "Gotchas" in this section added after the first printing.

17.1 GOTCHA # 1

On page 192 of FOOTPRINTS is an official NASA photo of the "Flag Salute Ceremony" being executed on the Moon during the Apollo 11 mission. Armstrong and Aldrin surrounded the flag as the light from the low altitude Sun cast long shadows of each of them.

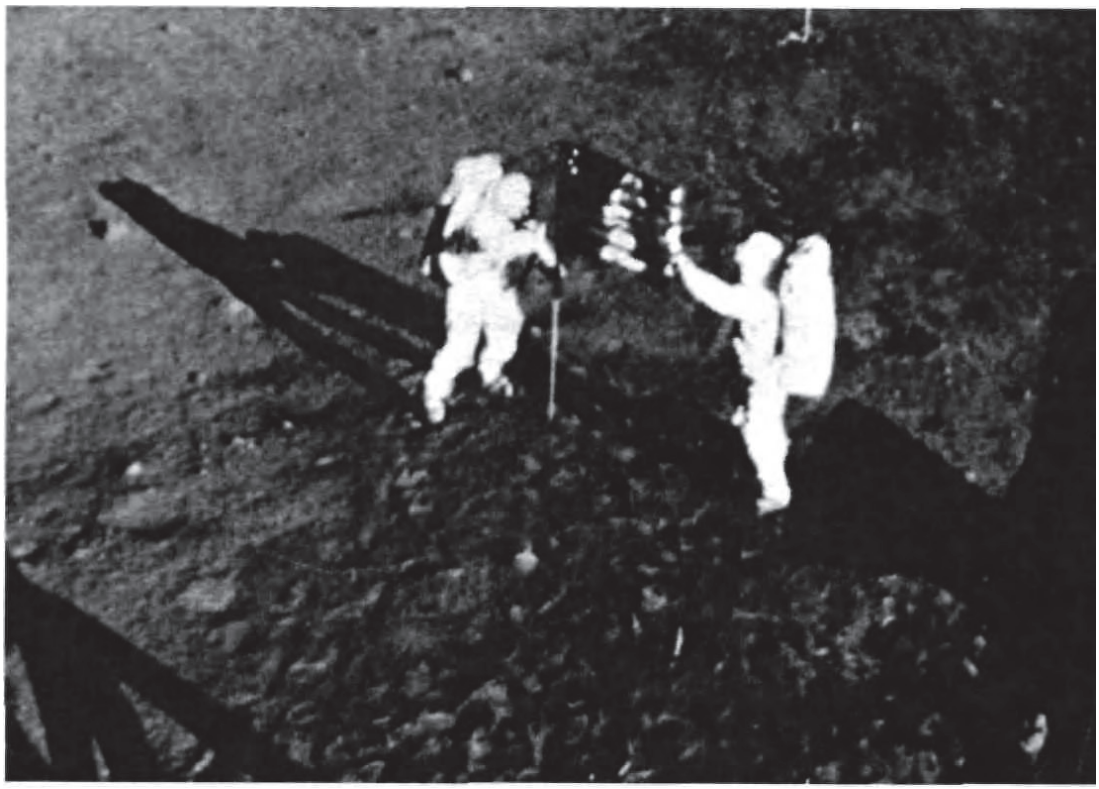
The picture printed here is reduced in size, and in black and white, because neither size nor color is germane to this "Gotcha". I didn't even try to get a duplicate of this picture from NASA. The three pictures I had previously ordered took about eighteen months and countless phone calls before they were delivered. When I received them, only one of the pictures was what I ordered. They sent two substitutes 1 didn't want or need.

Before continuing with the analysis of this picture let's remember some background. It was decided that the Apollo 11 LEM, the "Eagle", should have optimum lighting conditions for the first lunar landing. Collins describes NASA's choice of the Sun angle for viewing

the ground during landing. "If too high, i.e. overhead, the craters and boulders would not cast shadows, and depth perception and obstacle avoidance would be a real problem. Too high also meant the surface would be too hot. Too low, and the shadows could get so elongated that they would obscure other useful details and again make a visibility problem for the crew. A sun angle of about 10 degrees was deemed perfect"[1] Then Collins spent a few pages describing the cause of the Moon's phases (waxing and waning), and how they determined the neccessary time of departure from Earth in order to land at the chosen site so that the Sun would be ten degrees above the horizon.

The Eagle landed at 4:18 EDT.[2] A short time later the Eagle, now calling itself "Tranquility Base", transmitted the following: "I'd say the color of the local surface is very comparable to that we observed [their typo] from orbit at this sun angle — about 10 degrees ..."[3]

So, here is the picture that revealed its hidden treasure on the silver anniversary of the Apollo 11's return to Earth. A blurb next to the photo tells us that Armstrong is holding the staff and that Aldrin is holding the flag. If their actual heights were accurately reflected by the lengths of their respective shadows, then side by side they would have resembled the old cartoon characters — Mut & Jeff.



[1] p. 323, CARRYING THE FIRE, Collins, 1974, Ballentine Books
[2] p. 205, FOOTPRINTS ON THE MOON, Barbour, 1969, The Associated Press
[3] p. 295, WE REACH THE MOON, Wilford, 1969, Bantam

The first discrepancy is immediately apparent. Two men of nearly equal height have cast shadows of very unequal length. Not only that, but, once again, shadows which should be parallel, converged. The following measurements were taken from the reproduction printed in FOOTPRINTS, using a dial vernier caliper calibrated in inches.

Astro-not	Height (in)	Shadow length (in)
Armstrong	2.140	3.065
Aldrin	2.200	4.440

Aldrin's shadow is 45 percent longer than Armstrong's shadow. There is obviously something very wrong with this picture. At first glance it seems to require two different sources of light. Willis Carto of the national weekly newspaper "The Spotlight" soon ended that thought. He called it nonsense, and it was! The only possibilities left are it is a composite picture; the shadows have been painted in or it represents a sample of early computer graphics.

And even if there are two Suns, in the Moon's sky neither one is anywhere near the 10° altitude NASA babbled about. A little plane trigonometry reveals that Aldrin's personal source of illumination is at 26.4°altitude,[4] but Armstrong's shadow-casting light has outraced Aldrin's, and is at 34.9° of altitude.[5]

The EVA took place about 7 hours after landing. Since a lunar day is 30 Earth days long the Sun moves through the lunar sky only 12° in 24 hours. Seven hours would equal about 3.5° which would place the Sun about 13.5° off the horizon during their famous space walk.

At that altitude the shadows would have been a little over 9 inches long in the original photo. This is over twice as long as the longest shadow shown in the picture.[6] No single source of light can create unequal shadows from men who are nearly equal in height. And, as Mr. Carto also pointed out, where is the flag's shadow which should have neatly bisected Armstrong? Gotcha NASA!

NASA apologists have explained the longer shadow by proudly announcing that the flag's shadow has added to the length. If that were true then the angle from the tip of the flag to that end of Aldrin's shadow should be the same as the angle between Armstrong's backpack and and the top of his shadow. Using the flag pole to establish vertical, Armstrong's shadow shows the Sun to be 5° above the horizon while the flag's shadow shows it to be almost 20°. No matter how you look at it, this picture was FAKED!

[4]Tan (A) = 2.20 / 4.44 = tan (4.95) = 26.4 degrees
[5]Tan (A) = 2.14 / 4.44 = tan (6.98) = 34.9 degrees
[6]Lenght = Ht / Tan (13.5 degrees), L = 2.2 inches / .2400 = 9.16 inches

17.2 GOTCHA #2

Recently, while reading Aldrin's MEN FROM EARTH, I found this NASA policy statement. Aldrin is quoted here reminiscing about his Gemini 12 spacewalk when he happened to glance up and see something twinkling. "Stars in the daylight?" I asked aloud. 7 don't think so.' On the early Mercury flights, NASA scientists had predicted the astronauts would see stars in the daylight, but the astronauts, all jet pilots with high altitude experience, had been skeptical. Soon they figured out that you saw stars in orbit only when you were in Earth's shadow: night."[7]

After waxing poetic he then said that what twinkled was a plastic bag. The early rocket plane pilots saw stars in the daytime. Subsequently, however, on each Apollo flight NASA tells us that they navigated using the "dim and fuzzy" stars. Well, since they were not in the shadow of the Earth where did — all of a sudden — these dim and fuzzys come from? Since these statements are diametrically opposed, one or both must be a lie! What is the truth and where does the truth lie and why d id they bother to lie?

Repeating my statement from "Star light — Star bright," I believe that the brighter stars are visible to the naked eye in the daytime, from mine entrances, deep wells, and through a long black tube — if you know exactly where to look.

The truth could be easily determined by a ride on the next shuttle. However, since I couldn't, wouldn't dare ask NASA for that ride, I thought up a simple experiment. What I needed was an astronomer with a small "backyard" telescope equipped with clockwork tracking device. This is a motorized clockwork unit that compensates for the Earth's rotation and keeps the scope precisely and automatically on a target.

If one centers a bright star that is low in the east at midnight, when daylight breaks the scope would still be pointed at the target, provided the tracking device was working properly. At that time one would either see the star or not.

Before I could make any arrangements for this experiment the "SAT & TELESCOPE" magazine came to my rescue. In the September 1994 issue on page 99 is a two page article entitled "How to See Stars in the Daytime". It goes on to say that only the bright stars and the planets are visible under 50-power magnification. This is not exactly naked eye visibility that I had heard about, but it does prove that here at the bottom of the murky, polluted, dusty, water laden fluorescent well we call the atmosphere, people can see stars in the daytime.

This question is for you, Buzz Aldrin. How could you, and every other astronaut not be able to see the stars in the daytime from a vantage point 160 miles above the Earth's surface, where the remaining atmosphere is so tenuous that it might just as well be the vacuum of space? Gotcha NASA!

[7] p. 156, MEN FROM EARTH, Aldrin & McConnell, 1989, Bantam

17.3 GOTCHA # 3

On each of the 9 Apollo missions, which allegedly rounded the Moon, the command capsule and the service vehicle had to separate from the last stage of the Saturn booster's now dead carcass. This was accomplished by using explosive bolts and cable shears called "Pyros". After this separation, which was done as they neared the Moon, the command module would be turned around so that the command capsule could probe the LEM's drogue and connect up the access tunnel. Once attached the hatch covers on both LEM and command capsule could be removed, allowing free, if cramped access. Without any real practice, except in simulators, these men did this nine times in a row without a problem.

Which also means that nine (repeat 9) times in a row the vital, pyros must have worked flawlessly. If one exploding bolt "hung-fire" for even a millisecond, or if the exploding shear left even one wire not completely severed, the delayed and uneven force would induce a motion contrary to the rest of the impulses. The carcass would begin to rotate and by the time the command capsule reversed its attitude, linkup would no longer be possible. It would be like taking a flying probe at a rolling drogue. How could such perfection be possible nine times in a row? It wasn't! On Apollo 13 the blasts that separated the service module not only rocked the craft but caused a rippling movement.[8]

Remember the Apollo mini-disasters that I spoke of in "No Business Like Showbiz"? Here's one that Apollo 14 was supposed to have gone through. Stu Roosa had the Apollo capsule thrust its probe into the little LEM's drouge only to meet with total rejection. Over the next hour or so he backed off and tried again and again. But each time, his probe was refused entrance. He had only enough steam for one more attempt when Shepard told him, "This time, juice it!"[9] On the sixth attempt he rammed it with all his might and the probe latched inside the drouge real tight.

Are we supposed to believe that on every attempt to drive that probe home longitudinal axes of both ship and carcass were dead in line? So matched that not one dyne of force was transmitted off-center? Any off-center force would begin to rotate one or both vessels.

There may be some truth to the old saying that every dog has its day. I'm an old dog and Aldrin spit forth this gem while writing about the Apollo 9 mission. My comments are in normal type and parenthesis. "A couple of hours later they were feeling better and had separated the CSM (command module) from the S-IVB third stage (last stage of the Saturn booster). Scott then deployed his command module's docking probe and thrust the spacecraft neatly around to line up with the conical drogue that was nestled at the top of the lunar module (LEM). The latches all snapped properly into place. Just over three hours into the mission they were hard-docked with the LM. Dave Scott then backed

[8] p. 165, 13: The Flight That Failed, Cooper, 1973, Dial Press
[9] p. 289, MOON SHOT, Shepard & Slayton, 1994, Turner Publications

the two docked spacecraft away from the third stage and thrust well clear of the slowly tumbling white booster."[10]

Neither exploding bolts, nor cable shearing, nor the jets which moved the command module away, moved the booster. Yet, un-docking, which starts out in perfect alignment, can start the carcass slowly rotating or tumbling. A likely story! Gotcha NASA!

17.4 GOTCHA # 4

Remember the PLSS back-pack discussed in the section on the LEM's thermal problems? That entire discussion concerned the volume of water which was carried in the PLSS for cooling purposes. But the efficiency of the explosive freezing cooling unit became moot when I finally located a cutaway drawing of a PLSS. By taking the ratio of its known length and width, not only did I determine that the drawing was to scale, but I determined what the scale was. By that scale the water storage containers were 3 inches in diameter and 14 inches long.[11] This gives a capacity of 100 cubic inches, .43 gallons, or 1.63 liters. Less than half a gallon of water would last about 27 minutes, on the Moon even at the mythical rate of 100 % efficiency. That's a big difference from the 4 hours PLSS capacity claimed by NASA. Does NASA have an unrevealed way of concentrating water? We keep hearing about space age benefits — but that one would be incredible. Gotcha, NASA!

17.5 GOTCHA # 5

Aldrin claimed that access to, and egress from the LEM's side hatch was done on hands and knees.[12] Bill Kaysing claims that a friend of his who visited the space museum in Washington, DC a few years ago took a tape measure and succeeded in actually measuring the LEM's hatch as well as a space suit and back pack. He says that the hatch was simply too small to allow a man with a back-pack to pass through.

By scaling a picture of a 1/48 th scale model of a LEM, I determined that this side hatch (the one that leads to the ladder) was about 30 inches on each side. New information has it that it was 36 inches wide by 25 inches high. The young astro-nots had a ballooning pressurized suit to keep them from folding tightly at the waist, wherein I had my fat little belly accomplishing the same thing. It was a wash! Stripped to a pair of shorts I tried to use hands and knees to get under the edge of my kitchen table.

[10] p. 211, MEN FROM EARTH, Aldrin & McConnell, 1989, Bantam
[11] p. 161, The Illustrated Encyclopedia of SPACE TECHNOLOGY, Gatland, 1981, Harmony Books
[12] p. 240, MEN FROM EARTH, Aldrin & McConnell, 1989, Bantam

Since it has only 25 inches of clearance, in order to fit I had to go down to elbows and knees instead of hands and knees. But, if I add 10 inches for the thickness of the back pack, the LEM's hatch would have to be a minimum of 35 inches high. NASA never mentioned that an astro-not would have had to wriggle on his belly, like a snake, to get through the hatch. How come? Gotcha, NASA!

17.6 GOTCHA # 6

The LEM consisted of an upper pressurized ascent unit whose function was to pilot the whole unit down to the moon using the large rocket motor in the lower unpressurized descent unit. To escape from the Moon, the upper ascent stage would then blast free from the lower part and ferry the Moon-walkers back to orbit to link with the command module. This ugly insect consisted of jutting angles and flat planes. Any first year structural engineering student would know enough to design a pressure vessel as a sphere, but the moron who designed the LEM didn't seem to know this.

So the NASA apologists can't claim that the LEM was not pressurized, we have this statement about the Apollo 11 LEM; "They worked their way to the ladder and squeezed into their "flight deck," and sealed and pressurized their cabin."[13]

On page 160, of The Illustrated Encyclopedia of SPACE TECHNOLOGY there is a cut away drawing of the LEM. It has been drawn to scale and from that I determined that there was at least one large flat panel with dimensions of 3 feet across and 4 feet high. Another section of the drawing shows that the ribs are on 6 inch centers. I assume this section to be typical and that the rest of the LEM was ribbed the same way.

Aldrin speaks of the LEM's ribs thusly, "...and there were ominous corrosion cracks in the LM's paper-thin aluminum ribs."[14] A tissue paper thought here raises its thin head. Since the support ribs of vehicles, vessels and structures are always much thicker than their covering, you can imagine what the hull thickness must have been.

Continuing with the dissection at hand, I shall assume that the designers correctly put the ribs across the shortest span. The LEM was pressurized in space to 5.2 pounds. That's the minimal pressure needed to sustain life on a long term basis. Such being the case, and since there are 144 square inches to each square foot, the hull was under a load of 750 pounds per square foot. Compare this with 30 pounds per square foot allowed, and designed for on the floor of your home, or with the 200 lb/sq ft loading of commercial warehouses.

[13] p. 247, MOON SHOT, Shepard & Slayton, 1994, Turner Publications
[14] p. 178, MEN FROM EARTH, Aldrin & McConnell, 1989, Bantam

This simply means that each rib (6 inches on center) had to carry 1100 pounds. In structural engineering, loading is translated into a concept called the Maximum Bending Moment (MBM) which is measured in inch pounds. For a beam (rib) supported on both ends and carrying a load the formula is W x L / 8, where W is the load in pounds and L is the span in inches. Therefore the Maximum Bending Moment for each rib is 1100 x 36 / 8 or 4,950-inch pounds.

The restraining moment needed to support this load is found by determining a thing called the Section Modulus (SM). This is found by dividing the MBM by the working tensile strength of the material involved. I don't know which particular aluminum alloy was used, nor do I figure I will live long enough for NASA to answer my letters, but since all aluminum alloys have less strength than steel, I shall pretend that the paper-thin ribs he (Aldrin) spoke of were made of common steel which has a working tensile strength of 20,000 pounds per inch square.

The Section Modulus (SM) needed to hold this load is found by dividing the MBM by the tensile. Then SM = MBM / 20,000 or 4,950 divided by 20,000 which equals .2475. The proper size rib to do that particular job is 2 * 2 * 1/4 inch steel angle iron which has an SM of .25. Would you call a chunk of metal that is 1/4 inch thick paper-thin? Neither would Aldrin! Obviously, whatever ribs he was writing about would never, ever, hold the internal pressure necessary to keep men alive and breathing in space.

Just a few words now to put the icing on this particular "Gotcha". Seven paragraphs ago a direct quote was used to describe how "they repressurized their cabin." They went on to tell how they did this long checklist. Here's the very next paragraph: "They removed their boots, slipped out of the backpacks heavy with life-support equipment that had kept them alive on the moon, reopened the hatch, and dumped them along with crumpled food packages and filled urine bags onto the surface."[15]

Not a word about spending another two hours or so venting the LEM, or about hooking up air lines to stay alive once the hatch opened onto the vacuum of space. There was no airlock on any LEM! Gotcha , NASA!

17.7 GOTCHA # 7

I finally found out why the early NASA engineers and scientists who wrote Astronautical Engineering and Science in 1963 used 25 rem as a benchmark on their charts on hull thickness versus solar activity. I ran out of gas at my daughters house and while waiting for rescue I began to read some old "National Geographies" magazines. The May 1987 issue held a feature story by Mike Edwards entitled "Chernobyl — One Year After". On

[15] p. 247, MOON SHOT, Shepard & Slayton, 1994, Turner Publications

page 640 I found the following statement. "In general, 5 rem is considered acceptable for a nuclear-plant employee in a year, with 25 rem (the total countenanced for Chernobyl cleanup workers) an allowable once-in-a-lifetime dose."

The Apollo 16 mission spent 13 days out from under the Van Allan radiation shield. There had to be an average of 14.47 flares per day as found from the "Monthly Counts Of Solar Flares" chart. This is a total of 188-flares and for arguments sake we will stipulate that the better than 1 % of heavy flares didn't happen on this trip nor during the other 72 days that the other Apollo missions were mooning the Earth. I will even stipulate that their ship's hull and their suits were a centimeter thick. However, 20 % of these flares had to be of intermediate activity and each dosed the crew with 25 rem. This represents 37.6 flares which gives astro-nots John Young, Ken Mattingly and Charles Duke a grand total of 940 rem apiece.

Three astro-nots went to the moon twice and for the following calculations we shall only consider the intermediate flares. Astro-not Dick Lovell was allegedly present on Apollo 8 for 6 days and on Apollo 13 for 6 days. This 12 days of total exposure was 870 rem. Astro-not Gene Cernan supposedly was on Apollo 10 for 8 days and on Apollo 17 for 12 days for a total of 20 days. This amounts to total of 58 flares for a total dose of 1445 rem. However, astro-not John Young seemingly flew on Apollo 10 for 8 days and on Apollo 16 for 13 days, for a grand total of 21 days. This gives us 61 flares and 1525 rem exposure. At this exposure they all should have died in space. These men are as radiation resistent as cockroaches. Gotcha NASA!

17.8 GOTCHA # 8

I saved this for last because it is the greatest "Gotcha" of them all. Please recall that I have sarcastically referred to the Apollo 13 explosion, and the other near disasters that NASA kept reporting in the chapter titled "No Business Like Showbiz". I have finally pinned the NASA Monarch butterfly to the board.

In the spring of 1970 our country was preoccupied with "policing" South Vietnam. Each night on TV the body count of the enemy was reported. This was presumably our scorecard the way we could determine whether we were winning. By the time our rear guard was being helicoptered from the roof of our embassy in Saigon the total body count had risen to include the entire population of both North and South Vietnam. Some of us thought we had been lied to about the numbers. Later we would find out that the count also included bodies from the CIA's secret war in Laos and Cambodia. How can there be a secret war without complete collusion of the news media?

There was also much domestic strife, including rioting on our college campuses. Poverty was proliferating as fast as the demonstrations. Even patriotic Americans were beginning

to look at Moon-walkers and ask, "Who cares?" The ongoing space opry called the Apollo missions needed to be spiced up, say, with high drama, danger and suspense. So, enter the Apollo 13 mission with Dick Lovell, as mission commander; Jack Swigert as orbital housekeeper, and Fred Haise, who was going along just to gambol on the Moon with Lovell.

At this time I want to interject the sequences of a normal Apollo mission to and from the Moon.

1. Lift off followed by the ejection of the escape tower.
2. The booster's 1st stage shuts down, detaches, and the 2nd stage fires.
3. The 2nd stage shuts down, detaches, and the 3rd stage fires.
4. The 3rd stage shuts down when the craft is in Earth orbit.
5. The 3rd stage fires again to accelerate the craft toward the Moon.
6. The combined command module and the service vehicle, as a unit, detache from the third stage which holds the LEM in its top section.
7. The combined module then turns around and links nose to nose with the LEM.
8. The large engine in the service vehicle makes up to three, mid-course corrections.
9. The service engine fires again to slow the craft down to allow it to enter and maintain a lunar orbit.
10. The LEM detaches and uses its lower engine to land on the Moon.
11. The LEM's upper stage detaches, and carries the men back to the command capsule, leaving the lower stage on the Moon.
12. The upper stage is detached and abandoned in lunar orbit, and the service engine fires the linked craft toward Earth.
13. The service engine makes mid-course corrections, and then it too is detached from the command capsule just before re-entry.

However, in Apollo 13's dramatic plot, the service module is destroyed by exploding oxygen tanks on its third day out. Just for argument's sake we will assume that all the mid-course corrections had already been made by the service engine. Remember that all the lost oxygen was to be inhaled by the men, and slurped up by the fuel cells to provide electric power and water for drinking. Most importantly, it was necessary to remove heat from the craft by explosive freezing. Speaking of the service modules's engine, "They knew the powerful engine would no longer fire, starved as it was of the electrical energy needed

for ignition and burn. Without it they couldn't get into orbit about the moon. More importantly, without it they wouldn't be able to get home."[16]

The outcome of this tragedy was that not only would the mission objectives not be accomplished, but they were about to lose their lives deep in cold space, just before or immediately after their water and oxygen ran out.

To save themselves, the crew left their spacious 210 cubic foot mansion and had to move, bag and baggage, into the 160-cubic foot Mother Hubbard's shoebox called the LEM. The crew compartment dimensions of the LEM, as reported on pages 158–160 in the Space Technology Encyclopedia, was 7 ft 10 inches in diameter and 3.5 feet high. This is yet another dimension that doesn't fit NASA's story since we were always given the impression that the astronauts were standing as they came and went from the Moon's surface.

The information below was also gleaned from the same pages of Space Technology Encyclopedia.

Part	**Weight (lb)**	**Fuel wt.(lb)**	**Thrust (lb)**
Command capsule	13,090	?	?
Service vehicle	?	54,074	20,500
LEM	33,200	?	10,000

More information on the LEM comes from two other sources. First the weight of the LEM's fuel is derived from the following information:[17] The ascent stage weighed 10,600 lbs and the empty descent stage 4,800 lbs for a total weight of 15,400 lbs. Subtracting from the 33,200 lbs (total weight of the LEM) we find that their was 17,800 lbs of fuel on the lower stage of the LEM. That's about 9 tons.

The combined weight of the command module and service vehicle was 100,000 pounds.[18] Adding the 13,000 lbs of the command module to the 54,000 lbs of the fuel comes to 67,000 lbs. Subtracting that from the 100,000 lbs gives an empty service vehicle weight of 33,000 lbs. The weight of the attitude fuel was small and not needed for these calculations. Let's make two reasonable assumptions. The first is to assume that the service vehicle had expended some of its fuel on minor mid-course corrections. The second assumption is that the majority of the fuel left was needed to bring the command capsule back home.

Lovell is quoted by Hurt as saying, "We had to continue on with about 400,000 pounds(sic) of unburned fuel plus all the mass it had otherwise."[19] I strongly suspect Lovell was talking

[16] p. 261, Ibid.
[17] p. 57, MOONGATE, Brian, 1982, Future Science Research Publishing Co.
[18] p. 157, THE VOYAGES OF APOLLO, Lewis, 1974, Quadrangle
[19] p. 208, FOR ALL MANKIND, Hurt, 1988, Atlantic Monthly Press

about 20 tons (40,000 pounds) of remaining fuel and accidentally added a zero. If that figure was correct then there is absolutely no way the thing could have gotten off the ground. Rounding the Moon is basically the same as rounding a corner in a car at high speed. Just as you must apply the brakes while coming down a hill to round a sharp curve, the service engine must deaccelerate the space craft as they zipped down the Moon's gravity hill in order to make the turn around the Moon.

Well these men had "The Right Stuff, and had already begun to implement their sensible retreat to the LEM while mission control was still dithering and blathering.[20] Mission control finally agreed to allow them to use the LEM's decent engine to enter a lunar orbit and again to blast for Earth. This also meant that any necessary mid-course corrections would also depend solely on the LEM's 9 tons of fuel. Adding to the equation is the fact that, in addition to the 20 or so tons of unburned fuel in the service vehicle there would be an additional 15,400 pounds of LEM, plus its 9 tons of fuel plus 33,000 lbs for the service vehicle. That's over 100,000 pounds.

When the service engine performs the same job, Aldrin, says the lunar orbit burn takes 6 minutes.[21] Then Aldrin reports that, to send the craft back to Earth, it took a 2.5 minute burn which consumed 5-tons of fuel.[22] This is a rate of 2 tons per minute and indicates that the lunar orbit burn consumed 12 tons of fuel. Please bear in mind that the service engine has no throttle. It's either all on or all off. When operating, the engine consumes the maximum fuel per minute. This leaves us with the unalterable fact that 17 tons of fuel were needed to do the job, without any later mid-course corrections and without all that extra mass.

And naturally, because of all the extra mass, it would logically have required much more than 5 tons of fuel to accelerate up the Moon's gravity hill for the return to Earth. Still ... the LEM only had 9 tons of fuel.

They didn't even complete the first burn, yet, they were short 3 tons of fuel. NASA would later claim that, "On the first three lunar flights, Apollos 8, 10, and 11, the spacecraft had been programmed so that the final engine burn launched the ship into a "free return trajectory". Once the craft looped around the moon, it would be on the correct course for its return trip to earth. No additional engine firings would be required."[23] This is suposedly a trajectory that doesn't require any lunar deacceleration to round the Moon and return directly to Earth.

I am having a problem with NASA's analysis. To get to the Moon you must travel away from the Earth. If you skim by the Moon you are still going away from the Earth. If your velocity is high you will then go a damn long way past the Moon before you will lose all

[20] p. 207, Ibid.
[21] p. 233, MEN FROM EARTH, Aldrin & McConnell, 1989, Bantam
[22] p. 245, Ibid.
[23] p. 263, MOON SHOT, Shepard & Slayton, 1994, Turner Publications

velocity and then be sucked back toward it. Falling back will take as long as going out did. Apollo 13 didn't spend any extra days in space so how the hell did they rub off all that velocity?

Harry Hurt, the author of FOR ALL MANKIND is a most meticulous researcher and the following was in his book which was published in 1988. "The first burn would sling shot the spacecraft around the backside. The second and even more critical burn was the Trans-Earth Injection or TEI, which would blast the spacecraft toward home."[24]

This is directly contradicted by THE FLIGHT THAT FAILED by Cooper which was written only about the Apollo 13 disaster. Cooper claims that the first burn after the explosion came after they rounded the Moon.[25]

Without continuing to beat this dead NASA horse, I want to ask why the service vehicle was launched carrying 57,074 pounds of fuel if 9 tons could have done the entire job with the exception of some mid-course corrections? And, while it was pushing an extra 40 tons or so! At a lift ratio of 18 lbs of fuel needed to send I lb of container to the Moon, they could have reduced the weight of the entire launch vessel by over a million pounds on each mission. The press has an acronym for NASA which is "Never A Straight Answer". Do you wonder why?

GOTCHA, NASA!

[24] p. 210, FOR ALL MANKIND, Hurt, 1988, Atlantic Monthly Press
[25] p. 69, 13: The Flight That Failed, Cooper, 1973, Dial Press

18 THE CONCLUSION

I have waved red flags of facts in front of you, and I know it may cause some to seek reassurance from accepted establishment experts. Such folks, not really wanting to believe all this, will want to accept the reassuring pooh-pooh's and tut-tut's in place of hard facts, logic, photos and their own common sense. If there are more people who accept NASA's truths than those who can tweak their own EBS and face the real truth, our country will surely be destroyed. Today, it is already stressed out from too much debt, social division, lack of work (especially for our blue collar people), immigration, incredible taxes, and a failing infrastructure. Today, leaders slough off the debt burden and lay it on our children, and their simplistic solution is to raise taxes on a people already as highly taxed as any in history. Remember your true tax rate is not what government experts tell you it is, it is the number of days you must work each year to pay all your taxes, all your fines and all your licenses. That takes, at least, until August each year, although the Government admits to mid-May. That is an effective tax rate of over 60 %, and it's guaranteed to climb still higher.

For over fifty years our leaders have taken all the golden eggs that the American goose has produced, taking them as fast as they could be laid. Unfortunately they have wasted most of these resources by spending them on foreign adventures and misadventures. And naturally, when nefarious things are being done, some golden eggs will always slide sideways into private nests.

Now our fearless leaders are greedily grasping for the seeds of those eggs, long before they are ready to be laid. By these actions they are literally ripping the guts from the golden goose. Our national creditors will soon demand their money and I can't fault them for that! When you borrow, you owe! (When I wrote this in 1992, I was unaware that the FED was a private corporation.)

When our venal leaders embarked on this path only an occasional lone voice bayed in dissent. The great majority of us unfortunately did nothing to stop them. If we continue to do nothing and let the government and its academic cohorts con us again we will merit the results and prove true the adage, "A people deserve the government they get." It's true that a democracy carries the seeds of its own destruction; but it also carries the seeds of its salvation. That's the point here. We must wake up to the facts presented here, and prevent them from happening again!

In this "free" country, with constitutional guarantees of "free" speech and press, between "SLAP" lawsuits (lawsuits simply to destroy), "political correctness" and all the other restrictions, there doesn't seem to be much freedom left anymore.

Is there anyone left who will cry out, "I completely disagree with what you are saying, but will fight to the death for your right to say it." Be careful America, for whatsoever you do to the least of your fellow citizens, so will eventually be done to you by governmental machine guns, bayonets and fire. Consider the recent wholesale roasting of men, women and children in Waco, Texas. Remember, they also burned the Patty Hearst's Symbionese Liberation Army in Los Angeles many years ago and an outfit called MOVE (dissidents in Philadelphia). That's three for three. Dissidents beware — we can be burned alive. Then in Oklahoma City they claim an exterior explosion imploded reinforced concrete. And recently the World Trade Center was also imploded by a fires in steel buildings. The lies expand!

Today we are a country drowning in short-term debt. Some small portion of this is owed to other nationals like the Japanese and the Arabs. The largest (by far) percentage is owed to the Rothschilds and their cohorts, the Rockefellers, Warburgs, and Schiffs. When I wrote this book I knew not of the Rothschilds. Our economy is in chaos because greedy MBAs, chattering like insane monkeys about the bottom line, have shipped our manufacturing industries out of the country while our great pollution experts created ever more restrictive policies and higher fines for those industries that are left. What's even worse, they pointedly ignore the fact that our local, state and Federal governments pollute more than all the others put together.

In too many communities today only minimum-wage service jobs are left for blue collar workers, male or female. Many of our people cannot handle the servile attitude expected for most service jobs. This has left us with a decaying tax base: requiring ever increasing taxes from the only segments of our population who have ever paid real taxes, the poor and the middle class.

In addition, while the number of our homeless citizens and those in extreme need passes 5 million our social systems and our infrastructure has been overwhelmed by almost unrestricted, and largely secret, immigration from growing populations of third world countries. Too many of them are illiterate, ignorant, and fanatically religious. In the 1960 our leaders told us to cut our birth rate. And we did. But, to solve the overpopulation nightmares of other countries we have deliberately opened our gates. By some particularly twisted logic we now give aliens our Social Security and SSI Disability and they never paid a dime into our system. Thank you UN.

Since 1950, the bean counters at the census bureau have failed to reflect any of this. They have only counted white Americans (with any accuracy). The cause is partly stupidity and partly political correctness. This is an equation for disaster and day by day, our leaders trade off our Constitutional liberties for their own security. During the spring, summer and

fall of 1994 our military was being trained for search and seizure (for the first time in our history). Huge civillian control concentration-type camps are also being created on military bases by FEMA (Federal Emergency Management Administration. Many of those FEMA camps have zero facillities; only razor wire and guard towers surrounding open fields. These are not concentration camps — they are death fields. Concentration camps have roads, barracks, commisaries, etc.

To top that off many of our troops are training under foreign officers and our officers are training foreign troops, all this while the UN is stockpiling tanks, trucks and armored cars around our country. If this is too much to believe read the back issues of the Washington, DC paper "The Spotlight". (This paper was finally sued out of existence!) It doesn't take a rocket scientist to see our nation is in a very precarious state.

When NASA raids our treasury again we will be forced to default on our debt and in that instant of default we will be reduced to peonage. America is the only altruistic country in the history of man, but our generosity has laid us open to creditors who will take their pound of flesh. They will follow precedent and ask for territory to meet the unpaid interest. Remember, Russia sold Alaska to us and France sold the Louisiana Territory to us because they needed money. We will have to fight to keep our nation together.

When we had a nation filled with factories manned by skilled blue-collar labor; we had machine shops bulging with tooling and manned by skilled craftsmen. Next time we will have to depend on imports for our arms, munitions and supplies. Next time the tough slum kids, and the even more sturdy farm boys, will have to fight without superior arms and firepower because our imports will be under UN embargo and our major cities will be under martial law enforced by UN troops. This is about the best case scenario I can present. The others are even more horrific.

Then our creditors will have UN backing (they are the UN) as they partition our country! We will have blue-helmeted troops patrolling our streets and doing door to door roundups of the few arms that our government collectors have missed. If we lose, our United States will be forcefully partitioned into ten small countries. One of the "One World" think tanks and the secretive FEMA has us already divided us into ten "Federal" districts (countries) that bypass state lines. I believe we are in preparation for that day. Remember what happened to Russia in the very recent past.

Here's maybe an even worse scenario: next time our blue-collar men and women will repeat the common non-action of citizens of the Roman and Grecian empires which preceded ours. They no longer cared what happened to their government that had so abused them, and they stopped fighting for it. So while we still have the time, spread the word that, "A Funny Thing Happened On Our Way To The Moon" and that they intend to screw us again and again.

Until we truly solve the problems of creating powerful and efficient space engines, and engineer space ships that provide protection for our astronauts from deadly space

radiation; and we build suits that will allow men to actually work in a vacuum, we surely can't go to the Moon. Let alone to Mars.

At the very start of the space debacle, an old warrior tried to warn us. Authors, Youg, Silcock & Dunn wrote this. "In Eisenhower's farewell address to the nation, the old soldier uttered a phrase which nothing in his eight White House years had caused the world to expect of him. For seemingly the first time he said something original, dramatic and durable. "In councils of government," he warned, "we must guard against the acquisition of unwarranted influence, whether sought or unsought, by the military-industrial complex."[1]

Ike neglected to mention the academic, legal and medical cohorts. As far back as 1969 these same three separate authors saw through some of NASA's sham and said so. For instance, of NASA's public relations department: "Its spokesmen are masters of the vocabulary of adventure and scientific discovery conducted for the benefit of all mankind. Ceaseless repetition has ensured for this unconvincing position a triumph over its essential unreality."[2]

Unfortunately, all these three authors failed to see exactly how unreal everything was. In all fairness however, it should be noted that these authors were English and not as emotionally involved as we Americans. We were happily and faithfully accepting every word uttered by our big daddy in Washington. Me too, I was conned!

These authors continued their commendable dissection of our motives, "If space has produced an image of strength, Vietnam, assassination, ghetto violence and economic injustice have created one of uncertainty and social incompetence. In terms which men can understand as relating to their own lives, American capitalism of the sixties does not have an enviable record. It has created great wealth, and it has sent Americans to the Moon. But around the world, America is despised as much as she is feared, its citizens pitied at least as much as they are envied."[3]

Again, they also compared the Apollo missions with other historical follies that had broken the backs of the cultures that produced them. "Other societies offer remote instances of massive resources spent on goods of vague utility: Egypt with its pyramids; medieval Europe with its cathedrals towering over the surrounding squalor; the palace of Versailles. But in truth, it is unique in history for a nation to invent and accept a challenge like Apollo, costing so much and promising few material rewards, and then to commit itself publicly to completing it in a time which made no allowance for failure. The moon landing demanded from America, her people and her institutions a combination of qualities never previously seen in the history of any nation."[4]

[1] p. 56, JOURNEY TO TRANQUILITY, Young, Silcock & Dunn, 1969, Doubleday
[2] p. 94, Ibid.
[3] p. 290, Ibid.
[4] p. 284, Ibid.

Another writer, Harry Hurt, an American, speaking about the Apollo 8 mission said, "In essence, the mission was a grandiose public relations venture that promised no tangible scientific or technological rewards"[5] — The same could have been said about all of the Apollo missions.

To their credit, Young, Silcock & Dunn, questioned the sense of further flights even before Apollo 12 cleared its pad. "A decision to go further cannot be convincingly represented as a bid for immediate world prestige or identifiable scientific discovery. Apollo has shown that those objectives, although they be made to attract the support of the mass of men for the enterprise, are in fact chimerical. In sending men to Mars, it will be the act itself which counts, the great instinctual leap."[6]

They continued, "Unadorned by reason or logic, it is the proposition which men must examine as they attempt to determine whether journeys beyond Tranquility are a necessary gratification of their primitive instincts, or an insane distraction from the real work of the world."[7]

I can't even conceive of what they would have had to say, if they had known it was all showbiz and a supreme con job, similar to each of the historical works they named. At least those ancient con artisans built something that lasted, the Pyramids for instance. Our con artists gave us nothing but a snow job, a lot of debt, and a tiny boost to the already blossoming technology which we would have eventually achieved without the incredible expenditures by NASA.

Harry Hurt mistakenly pointed to the PC (personal computer) as a result of the Apollo Program. Nothing could be further from the truth. If that was the case why didn't IBM invent it, particularly since IBM received hundreds of millions of dollars from the government? They were fabricated instead in a garage owned by a non-member of the establishment. The same inventive route applies to both DOS, the operating system, and the floppy drive!

This leads inexorably to a final question. Why didn't the astro-nots capture those dim, fuzzy, hard-to-see stars on film? Even back in the late '60s we had film that could record a flying owl as it snatched a mouse from a dark field at night. Couldn't NASA afford such "dim light" film? The astro-nots believed their own propaganda. Apparently they came to consider themselves "scientists", but if the stars in space really were 'dim and fuzzy', why didn't they recognize this as a great scientific discovery that it should have been?

Science is a quest for facts — and the dispelling of myths and false beliefs so that it can predict results. Since all astronomers, except maybe those that work for NASA, believe that the stars in space are always bright beyond our roiled and dirty atmosphere, and

[5] p. 96, FOR ALL MANKIND, Hurt, 1988, Atlantic Monthly Press
[6] p. 295, JOURNEY TO TRANQUILITY, Young, Silcock & Dunn, 1969, Doubleday
[7] p. 296, Ibid.

since most of us believe this to be true, why didn't they dispel this myth? Wouldn't that have been more scientific than collecting rocks and dirt?

Why did they need the Rover? Why? To help them collect 840 pounds of so-called lunar rocks. These rocks cost over 47 million dollars a pound! The excuse offered at the time, was that a few samples would tell us the history of the Moon, Earth and the universe. So they took four Rovers to the Moon. They cost about about $18 million each, but their weight is never spoken of. Why not? Would airplane and ship loaders wonder about balance? How do you load a heavy ungainly object off-center, as it had to be because of the central rocket engine, and not worry about balance? It is especially a problem on a ship whose center of gravity, once it enters a gravity field, is higher than the center of thrust.

Then their is the touted "Rock of Ages" sought after by the astro-nots who never went; and it was — never found! In 1974 there was a conference in Houston that author Lewis tells us about: "Of the 840 pounds of rocks and soil returned from the Moon by Apollo missions, only 5 percent or 42 pounds have been distributed to investigators in the United States at the time of the Fifth Lunar Science Conference. Only about half of that had been analyzed by that time."[8] It should come as no surprise that none of the rocks analyzed are any different than those found here on Earth.

Almost twenty years have ticked by, yet we have heard little more about the Moon rocks. The entire Apollo program had been touted as one great scientific adventure. Each mission had certain scientific goals and the astro-nots allegedly spent most of their time in attaining these goals. Hurt explains, "The ALSEP experiments which the Apollo astronauts deployed on the Moon, which transmitted raw data on such phenomena as "moonquakes," "solar winds," and cosmic radiation, had to be shut down in 1978 due to congressional budget cuts."[9] As far as cosmic and solar radiation is concerned, I feel that NASA caused NOAA (National Oceanic & Atmospheric Administration) to obscure what is already known. That is not science, that is power politics!

In the section entitled, "Mass Murder or Utter Stupidity", we printed the beginning of this next quote by Hurt. Here is the rest: "Although Project Apollo was one of the most extensively documented undertakings in human history, many of the earth's five billion inhabitants still refuse to believe that twelve astronauts really did set foot on the Moon. Exactly how many people cling to this preposterous heresy is unknown because there has never been a world wide opinion poll on the subject. But just as the Flat Earth society in London continue to dispute evidence that the world is round, untold numbers of serious and not-so-serious disbelievers continue to insist that man's first lunar landings were actually a series of government-sponsored Hollywood hoaxes."[10]

[8] p. 300, THE VOYAGES OF APOLLO, Lewis, 1974, Quadrangle
[9] p. 304, FOR ALL MANKIND, Hurt, 1988, Atlantic Monthly Press
[10] p. 323, Ibid.

Mr. Hurt, I'm convinced all the documentated films, sound tracks and rocks were simulated. On the same page as the above quote Hurt tells an anecdote about Julian Scheer. "Shortly after the Apollo 11 and Apollo 12 missions, NASA public affairs officer Julian Scheer mischievously fueled the flames of doubt at the tenth annual meeting of a drinking fraternity known as the Man Will Never Fly Memorial Society. Scheer delighted some two hundred admittedly inebriated members of the society by narrating a film of astronaut training exercises at a terrestrial "moonscape" in Michigan that bore an indistinguishable resemblance to the real lunar landscape.

The purpose of this film is to indicate that you really can fake things on the ground — almost to the point of deception, Scheer informed his audience, devilishly inviting them to 'come to your own decision about whether or not man actually did walk on the moon.'"[11] Hurt called it 'mischief, but I see it in a different light. It was either an attack (or revelation) of honesty or an example of consummate arrogance. We probably will never know which.

I have not been able to find a single picture of a space-walking astro-not that didn't show deep wrinkling in the suit's fabric. Where are the bellows, the cables, the stiff tubes and the inner mesh that Collins bragged about? These pictures clearly demonstrate that a balloon effect is not present. This is powerful proof that we never walked on the Moon, or engaged in any such similar activity in space. Pressurized space suits must more closely resemble the Michelin-Man logo, or the balloons floated in the Macy's Thanksgiving Day Parade than any deliberate movement on the part of astro-nots. In addition, any such activity had better be done under the protective shadow of the Van Allen belt — like where the shuttles presently operate.

If this contention is not true, why did the Russians claim that they didn't know how to protect their cosmonauts from space radiation — while we seemed not to have any problems? According to the charts obtained from NOA A, even if our astro-nots were in space during the biggest solar storm of the century, they would have come to no harm. Why did NOAA send me optical data instead of the X-ray data I requested for the years that the Apollo missions were landing on the Moon? Since Apollo capsules didn't carry two meters of shielding mass, why did they suffer no effects from the average number of 274 class C flares and 13 class X flares that occurred while they were in space? We must assume that only godlike men with "The Right Stuff" can survive what would surely kill us lesser mortals.

So far as I can see we will be able to effectively walk in space only after we have created artificial exoskeletons, similar to the shells of crabs and insects. This will require reticulated and articulated suits, similar to those worn by deep sea divers working at extreme depths. The problem is we are stuck in a web of NASA lies. Until we expose them with an airing of the truth we can make no real progress beyond near-Earth space. Remember that a point to point congruency was found between the Collins zero G airplane practice and his alleged Gemini 10 space walk. Why fake a picture, unless to deceive?

[11] p. 323, Ibid.

To make real progress in getting to the truth means putting the lie to older fictional achievements, and thus, running the risk of opening up a political and social pandora's box. But if, as citizens, we cannot force it open then we are both morally and financially bankrupt.

Indeed, something like a pandora's box already exists for space. Witness the Skylab fiasco which was the direct result of the lies told by NASA and the astro-nots during the so-called Apollo missions. The design engineers either ignored or completely underestimated the magnitude of solar heating in space due to the false concept space is cold.

NASA (twisters of the truth) admit to exterior Sun-side temperatures of 295° F and internal temperatures of 120° F. But I believe they lied again. I believe the internal temperatures were much higher — thus ruining the interior and partially destroying food supplies, equipment and furnishings. According to Collins over 1,000 packaged meals were stored before the launch.[12]

I sincerely doubt that a jury-rigged parasol installed by "Michelin Men" could do all that much to alleviate the problem. One thousand watts doesn't buy much air conditioning, even if you can keep ejecting water into space to cool the ship. I believe that the three Skylab missions, like the Apollo missions, were at least partially faked. However, unlike the Apollo landings which NASA knew in advance were impossible, I believe during Skylab they really tried, but you can't run a scientific project if the information you give out is false or non-existent.

For example, I remember NASA touting one student's experiment. It caught my attention because it involved flying a model airplane in the zero gravity environment inside of Skylab. Since the force diagram for flight has a gravity vector, the academics were betting the model couldn't fly. Only folks like me felt it would, and if we were right the academics would have to come up with new ways of looking at flight.

The day the experiment was supposed to be run I rushed home from work. I spent the next few hours simultaneously, listening to both radio and TV for information about that experiment, but heard nothing. I called my friends and they hadn't heard a thing either. The next day I read all of the area newspapers, yet saw nothing. I have never heard another word about that experiment since. So much for NASA's desire to communicate with us average citizens.

And yes, I did go through the exercise in futility, of writing to NASA and asking for an answer. I'm still waiting. But since its only been 20 years, I guess I'll still have to be patient and wait some more.

Examine again the pictures of Collins' so-called space-walk in the beginning section of this book. I loved his attitude when it came to spending our money. Talking about redesigning the space suits,[13] which cost over $400,000 apiece, he says "The fact that this

[12] p. 166, LIFTOFF, Collins, 1988, Grove Press
[13] p. 221, SUITING UP FOR SPACE, Mallan, 1971, John Day Co.

was also an expensive course to follow did not worry me a bit. One nice thing about Apollo was that no one ever told us we were running the price up too high."[14]

From Glenn's brief 3 orbit ride in a Mercury capsule through the Gemini missions that orbited for as long as 14 days, only the Gemini 7 capsule reported a cabin temperature of 29° C (83° F) despite air-conditioning.[15] Not one of the Apollo missions report such heat problems during the 8 days each one spent in unremitting sunlight on their way to, and back from, the Moon? And neither did the Apollo 17's LEM. It sat on the Moon's hot surface in the blazing Sun for 75 hours (3 days) without a sunshade. This would have required all kinds of refrigeration, plus the electrical power to drive it. The only way you can refrigerate in space is to use the explosive cooling of ejected water. Many tons of water would have been required, and the spout of each ejection would have been readily visible.

Even the geo-synchronous satellites which spend 12 hours in the Sun and 12 hours in the shade report no overheating per se. However, I would bet that they were designed to function with internal temperatures high enough to kill astronauts.

How then could Skylab alone have this problem? In fact, NASA went out of its way to make us believe the opposite with its "Space is cold!" nonsense campaign. The only answer to this dilemma is that... Skylab was basically another ten billion dollar hoax. Skylab was supposed to weigh 34.4 tonnes (35.4 million grams), which made it 10 times heavier than the Gemini capsules. This mass (weight) has to approach the combined mass (weight) of the Apollo command and service capsules, which needed Saturn V engines to get them in orbit. (Both the Gemini capsules and the Skylab were orbited with the old Saturn 1B engines which had only 1/10 of the power of the humongus Saturn V engines).

This raises an interesting question about those Saturn Vs. Did each Apollo shot consist of lifting stripped-down and empty Apollo shells into the Florida skies using Saturn 1B engines? Bill Kaysing believes that the Saturn V engines never worked, and now it seems very likely that Skylab's heating problem was just another NASA lie in order to evade doing some of the more difficult scientific experiments whose results couldn't easily be faked.

New information seems to indicate that the NASA lies started with the Gemini 5 capsule. This mission was launched on August 21, 1965. The crew consisted of Gordon Cooper and Pete Conrad who reported that the oxygen pressure had dropped from 800-psi to 120 in their fuel cells during the first two hours because they powered down and had to shut down the air-conditioning so the capsule got cold.

Buzz Aldrin, in RETURN TO EARTH, never got around to explaining why Roy Neal's simple, no-tricks question was such anathema. What exactly is so bothersome about, "Now that almost two years have gone by, why not tell us how it really felt to be on the moon?"

[14] p. 134, CARRYING THE FIRE, Collins, 1974, Ballentine Books
[15] p. 104, HEROES IN SPACE, Bond, 1987, Basil Blackwell Inc.

Well, it has been almost 24 years, and he still hasn't answered that question other than to talk about depression. I believe his depression is certainly real, but what caused the depression? Why did that question make his throat dry, make him dizzy; even make him cry over it? As noted before I am no psycho-babbler, but it seems to me that only a psychic scar could produce that amount of reaction to an innocuous question. That scar could be the result of consciously living a lie or of drugging and hypnosis. Yes, it's very possible that our federal government would do this. The passing years have shown that the CIA is no better than the Russian KGB, the Iranian Savak, or the Nazi SS. They are simply more successful at their skullduggery than the rest because of their unlimited funding.

Will Aldrin and the rest of the astro-nots die with this lie gnawing a hole in their souls? Probably so, because they and many others committed a crime against the people of the world in general, and America's citizens in particular. They need our forgiveness, but to get it they owe us at least a deathbed confession. After all, by their actions they helped steal 40 billion dollars from the rest of us. By their silence they are compounding the sin.

They have apparently forgotten in their zeal as patriots that we citizens, not the leaders, are the country. I realize they may have had the best of intentions and that patriotism danced in their heads. But, the road to hell is paved with good intentions; skewed slightly from their original premise. The premise of the founders of this country was truth and honesty, but the CIA is a nest of premise-twisting snakes.

NASA's science is an accumulation of fiction piled on top of hard fact. Once the fiction starts the truth gets buried. Case in point: Rocks similar to the "Moon rocks" have been found in Antarctica or was it vice versa? The geologists have been forced to postulate that they were blown to Earth in relatively recent but unobserved meteorite landings or volcanic explosions. My own feeling is that the so-called "moon-rocks" brought back by the Apollo Program, were obtained in Antarctica during the IGY (International Geophysical Year) of 1957. From the few they've been able to examine, geologists haven't yet found anything unique about lunar samples. They're the same as rocks found here on Earth!

To this day the newer astronauts have rarely been interviewed, and none has ever spoken of the brilliance of the stars and planets. NASA instituted this policy. Why? Didn't the original pilots of the early high altitude rocket planes speak of seeing the stars in broad daylight?

And why aren't most of the Apollo astro-nots dying of cancer, leukemia, and/or deficiency diseases? In fact, according to the government's own experts, every man on any of those flights should have caught at least 70,000 rems each day of the trip.

The Moon hoax provided an incredible amount of money, much of which was pilfered by the so-called "intelligence community". Much of the excess money found its way into Vietnam and Laos, but the rest was undoubtedly swag. It crept, on feathery footfalls, into Switzerland where the gnomes of Zurich (Rothschilds' henchmen) guard it well for the spooks who stole it.

This book, no matter the exposure, cannot stop NASA's newest rip off attempt, "Project Outreach." Only an insider can do that. Today, our country cannot absorb a trillion dollar hoax, without the United States defaulting on our debt to our creditor nations. In the court of international last resort, the sale (transfer) of land is the only way to pay off debt by a country when all else fails. Which states do you recommend we cede to Japan, Europe or the Arabs? Where is the patriotism that drove us on all those years ago? Now is the time to become truly patriotic because it is needed more than ever! It is in the power of the original astro-nots to stop NASA now! All it takes are public confessions.

I understand the power of the shadow government, which I have challenged, in writing this book. But I write because I just happened to have been quietly sitting in front of the fan when they threw the blivit. (A blivit is ten pounds of shit in a five pound bag). I realize that if NASA even suspected any astro-not would confess, they would transport them to a federal funny farm before you could blink. I also realize that I have put those same astro-nots on the griddle, but somebody has to "fess up" to save our country.

Let me add here a cautionary word to anyone who finally does decide to "fess up". Tell no one of your plans. Don't discuss them in your car or house, because today the walls literally have ears and all telephones are tapped. Even the mail of possible 'enemies' of the state is read. Think about that, you heroes who may one day become enemies of the state! Trust no priest or minister because many of them historically have always supported the establishment and continue to do so.

Use special care in what you tell any psycho-babbler, since they have a natural propensity toward locking people who tell strange stories in rubber rooms. The only sure way to disseminate a confession to the people is to appear at a small TV station during the evening news-hour and ask for an immediate spot. Make sure it's taped. After that, call the other astro-nots and tell them exactly what you did and your reasons for it.

To Buzz Aldrin, I speak directly: I am reprinting one of the strangest quotations from your book. You were writing about the pin parties that were thrown after an astro-not allegedly ventured into space. You said, "I don't remember any special event at my first pin party except that there was a great deal of joking about my bananas. I do remember my second. Tom Stafford, John Young, and Gene Cernan had flown on Apollo 10, and because of enormous activity and concentration required to get Apollo 11 off to the Moon, their party was postponed. When a lull in our activities after flight permitted a free evening, the crews of Apollo 10 and 11 were given their gold pins.

> "The highlight of the evening was a film showing Fred Haise, my back-up on the flight to the Moon, stumbling around on the surface of the Moon until, in desperation, he retreated to the lunar lander which, the moment he stepped on the ladder, tumbled into pieces around him."[16]

[16] p. 189, RETURN TO EARTH, Aldrin, 1973, Random House

But Buzz, according to NASA's official records Fred Haise never set foot on the Moon! Apollo 13 (his flight) ended when an oxygen tank blew apart in space. Was this just another simulation like the Scheer film? Couldn't you tell the difference between fantasy and reality? Hercules, it's your last chance to direct the river of truth and flush out NASA's Augean stable.

Here's a happy thought — what will the other astro-nots do if one dies, and has made provision to posthumously release a confession? Will they band together and brand the deceased a madman? Suppose they do so, except for just one more maverick? The permutations are endless.

I'm convinced that NASA took us for a an incredibly expensive space ride. I am equally convinced that NASA's new agenda includes space stations on the Moon and a manned trip to Mars. Since they still use the fabric suits and have not found a way to lift a ship into space with 2 meters of shielding these new missions must again be faked. Their current temporary goal is a few billion dollar space station, but no bureaucracy ever lets go of its goals. It must ever entrench itself deeper into the public feeding trough.

Before NASA can restore its credibility here are some of the questions whose answers I would like to receive from —

Never
A
Straight
Answer

18.1 WHY ???

1. The first man in space, Yuri Gagarin, pronounced the stars being "astonishingly brilliant". Our astro-nots reported them as "dim and fuzzy". Was this because of NASA's inability to accurately simulate a starry background?

2. The photo of Collins in the zero-G aircraft was painted over to show him space walking on the Gemini 10 mission. Why was the picture doctored if the mission was for real?

3. The astro-nots reported that the LEM blasted out a deep crater in landing on the Moon. Why have NASA pictures never reflected this?

4. In fact, even the dust was left as shown by the crystal clear footprints under the various LEMs. Why should the Moon dust leave such clear footprints when here on Earth clear prints are always the result of moisture?

5. The original TV pictures were blurry and indistinct. The TV networks were forced to scan a magnified screen instead of piping the pictures directly using coaxial couplers. Why was NASA afraid to let us see the clear pictures?

6. The Sun creates only parallel shadows everywhere. Why did so many NASA Moonscape photos have non-parallel shadows?

7. The backgrounds on most of NASA's lunar photos starts after just beyond the subject and shows little detail. Why did NASA use painted backdrops?

8. Stage prop rocks have identifying marks so that they may be correctly positioned for the scene. Why did one of Moon rocks have a capital "C" marked on it?

9. A NASA photo of the Gemini 6A capsule clearly shows a long fiberglass whip antenna mounted on it. How did this antenna survive the tremendous heat of re-entry?

10. Skylab overheated after 3 hours in orbit while it spent 80% of its time exposed to the Sun. Gemini 5 became cold when power was lost, although it spent half its time in the Sun. Apollo 13 began to freeze up when it lost power even though it spent all its time in the Sun. All six of the LEMs spent up to 72 hours in the Sun and they were reported as "too cold to sleep in". Why do these discrepancies exist?

11. After a two and a half years I have not received the data on x-ray and proton solar emissions during the Apollo years. Why won't NOAA send me that data?

12. The Russians told astronomer Bernard Lovell that they knew of no way to protect their cosmonauts from radiation after they passed the Van Allen belts. Why did NASA claim that a fabric suit could protect them against lethal flares?

13. A NOAA solar flare expert claims flares are unpredictable. Why did Collins claim a few years earlier that NASA could predict them?

14. An astrophysicist who has worked for NASA writes that it takes 2 meters of shielding to protect against medium solar flares and that heavy ones give out tens of thousands of rem in a few hours. Why didn't the astro-nots on Apollo 14 and 16 die after exposure to this incredible amount of radiation?

15. There was a crotch-to-shoulder zipper on the Apollo space suits. Why was there such little leakage when even a pinhole deflates a tire in quick order?

16. The astro-nots seemed able to bend the joints of their fingers, wrists, knees and elbows at 5.2 psi. Why is a 4 psi boxer's speed bag virtually unbendable here on Earth?

17. Apollo space suits were air-conditioned by the release and consequent explosive freezing of water. This effect should be spectacular with the brilliance of the sunlight reflecting from a myriad of frozen crystals. Why didn't NASA ever film it?

18. During Apollo 11 either Armstrong or Aldrin went gamboling past the LEM. It was the atypical blurry ghost TV picture that we received from that mission. Why could you see the LEM through the astro-not at times?

19. During the flag setup ceremony on Apollo 14 the flag wouldn't stop fluttering. Since there is no wind on the Moon, why didn't they tell us they had a Moonquake at that time?

20. The best TV shot is the takeoff of the Apollo 16 LEM. The camera that recorded the blast-off panned upward to track the capsule. NASA now claims that this camera was controlled from Houston at the end of a longer than two second transmission loop. Who did they leave on the Moon to operate the camera?

21. Without reiterating the list of "Gotchas" I will ask only one question. How will NASA or their apologists explain away the eight "Gotchas"?

22. It is a simple fact that if a single th in g is wrong with a photo then it has been faked. I am not a photographer. Why have I been able to find something wrong with almost every NASA photo?

As citizens, you and I must retain our skepticism about "truth" in government. The great iconoclast, Mark Twain, correctly observed: there are liars, damn liars, and then there's Congress! He also noted that some members are undoubtedly among a definable "criminal" class. Nothing has changed. Eternal vigilance is the price of freedom!

Even voting faithfully is not enough to make changes. As documented in the book VOTESCAM — The Stealing of America, year by year our vote is increasingly being modified by electronic and other fraudulent means. It is vital that the majority of us retain an independent point of view. As George Wallace (the then Governor of Alabama and Presidential candidate) said about the two major political parties just before he was shot, "There ain't a dime's worth of difference between them."

We must work at a local level to eliminate voting fraud by demanding that we go back to electronic-free elections. This means paper ballots issued at polling place located, at most, every block or two so that neighbor recognizes neighbor. Then we must all vote and throw out most of the incumbants, regardless of party affiliation. If you agree that NASA must be stopped, then demand that your Congressional representatives force NASA to set the record straight. Phone their offices; bitch, agitate, picket, and gripe. If honesty is to be restored to government, it's up to you and me..

19 The Radiation Addendums

19.1 James Miller

When he was young, James Miller, quickly ran afoul of our "masters" by continuously challenging the status quo just as I did. However he finished college, spent 10 years in the military, and was later trained as a radiation expert. His job was to test both the X-15 rocket plane (extremely high altitude ship) and the B-52 that carried it aloft after they had landed. He consistently found that both ships were "very, very HOT and should have been washed down with special safety equipment. . ." This gear was never made available and he eventually quit that job.

Later still he established a very successful company until he came to the attention of those who "control" us. He was then attacked by their major weapon (our system of "justice"). He did jail time for having contempt (richly deserved) of the courts and the judges who rule them (in defiance of our ancient concept of the jury system).

After examination of the data NOAA sent me the second time, this same man asserts that the modern Imagineers (his name for particle and astro-physicists and astronomers in particular and scientists in general) have replaced the alpha, beta and gamma rays with proton flux (a non radioactive particle). They also only speak of the energy in an x-ray, instead of its radioactivity in rem. This data prompted his tongue in cheek question about how many rem there are in a one thousand ton asteroid or meteor traveling at 50,000 mph.

In his communications, he states simply that NASA has never released any real information about radioactivity in space. I guess NASA believes that if they ignore requests long enough the problem will go away. By law, anyone exposed to radioactivity in any form must wear read-out badges. We want to know why the true astro-nots' badge readings were never released. My friend Jim had a lifetime limit of rem and he only worked around the outside of the X-15 and carrier planes when they returned from high altitude flights. But the astro-nots claim they lived out there for days!

Jim stated that gamma rays are produced when any two particles collide, which agrees with what the astro-physicist Mauldin was saying in his book Prospects for Interstellar Travel. Mauldin stated that the protons create immense amounts of radiation that reflect

in all directions as they interact with other matter; thereby, necessitating either two meters of water shielding or its mass equivalent of other matter must surround all life forms in space.

My friend states that gamma is always created by the break up of atomic nuclei; the very process that causes an atomic reactor to go critical and to start generating heat. The Cherenkov glow is always present in a reactor's water and is caused by these rays. Why has NASA never released this data? They have hidden the truth by telling us that only a neutron can start an atomic chain reaction. In reality, every collision with matter by high velocity protons and x-rays produces radioactivity!

He also predicts that if I ever smoke them out, they will invoke "National Security", proclaim me to be a Whistle Blower, and threaten my termination. So be it. I will then join a long, long list of dead patriots.

James Miller, died in his sleep on New Years night of 1999. He was absolutely sure that because both NASA and NOAA are controlled by our "masters" through the CIA, they will never send me the radiation data (smoking gun) I seek. They never have!

19.2 James A. Van Allen

During the late 1950's, James A. Van Allen, the official discoverer of the Van Allen Belt which is our Earth's solar radiation shield, spent millions of government dollars launching high altitude balloons that when at peak altitude fired rockets into space. Nicknamed Rockoons, they carried Geiger counters because Van Allen, like Tesla 50 years before, also exspected to find energetic particles that were dangerous to man.

On page 39 of the March, 1959 issue of Scientific America, Van Allen wrote an article entitled RADIATION BELTS AROUND THE EARTH". The subhead said, Instruments borne aloft by artificial satellites and lunar probes indicate that our planet is encircled by two zones of high-energy particles, against which space travelers will have to be shielded."

In the beginning of his experiments everyone was puzzled because the counts of the onboard Geiger counters would rapidly climb with altitude and then drop abruptly to zero. On a hunch they finally included a second Geiger counter shielded by one millimeter (.042 inch) of lead to reduce the effect of the highest energy particles and shield out most of the slower ones. By this method it was soon determined that the high counts involved 25,000 hits per second with a peak bombardment of 40,000 particles per square centimeter per second. These high counts started at about 15,000 miles out from the equator and continued for another 15,000 miles. It then became obvious that the original Geiger counters had been overwhelmed by "an enormously high level of radiation."

At that time he also stated that at 30 miles above the Earth the Geiger counters became continuously busy. The word continuous is the operative word here! This altitude places both shuttle missions and the Mir space station under continuous influx. They warn us about Radon in our basements but they send people to spend months in this environment.

High altitude radiation is also shown by the fact that when the radiation count reaches 10 millirems (.01 rem), the SST which usually flies a great circle course over the pole at 65,000 feet is ordered to greatly reduce altitude. Should the dosage rise to 100 rem they must also change course away from the polar zone. A space ship going to the Moon will spend about three hours coming and going through these radiation belts. Then it will spend days in space traveling to the Moon and back in the thin hulled LEM and more days sitting under our deadly Sun on the surface of the Moon where there is no ozone, no clouds, no shade and no Van Allen shield. How much radiation is in space? Nasa claims from little to none!

When he wrote the article, Van Allen, suspected that solar emissions were the cause of the radiation, a suspicion later found to be correct. He had this to say, "In this theoretical scheme the radiation belts resemble a leaky bucket, constantly refilled from the sun and draining away into the atmosphere. A particularly large influx of solar particles causes the bucket to "slop over," mainly in the auroral zone, generating visible auroras, magnetic storms and related disturbances."

As early as 1963, NASA engineers and scientists wrote a book entitled "Aeronautical Engineering & Science" where they stated that even minor solar storms would give people 25 rem per hour through a one centimeter thick aluminum hull. Because the metal on the LEM's hulls were less than .002 inches thick, that 25 rem must be much higher. And the metal of the command capsule walls wasn't much thicker than that of the Lem..

From NOAA solar records we find that there were 134,793 visible solar storms of all sizes and powers during the 25 year period from 1967 through 1991. This is an average of 14.77 storms per day. If each of these lasted only an hour (they last much longer), the average total minimum rem per day in space for anything organic that is above the Van Allen Belt, is 369 rem. In 32 short hours all living things except cockroaches, some bacteria and certain viruses would be dying.

This is why John Mauldin (ex-NASA astrophysicist) in his book "Prospects For Interstellar Travel" wrote that "at least 2 meters (6 feet) of solid shielding" is needed to protect "all living organisms". Anything less is suicide! This is what the men of science had to say about radiation in space. NASA's spin doctors claim that men can live after 500 rems and that space has very little radiation.

On June 24, 1996, I received a copy of a letter sent to Bill Kaysing, a writer on the NASA hoax from Apollo "astro-not" (not a typo) James "Liar" Lovell of Apollo 13 fame. He wrote that Bill had a screw loose and he was wasting his life by doubting NASA. About 3

weeks later Liar Lovell was interviewed in Illinois by a California newspaper (Bill's home territory). He went further, calling Bill a "whacko". The fact that he personally sent me a copy of his letter before the article, proved the libel was both malicious and premeditated.

Bill filed a libel suit and the war was on. I joined the fight to handle the space technology. On our first interogatory we asked if Liar Lovell had ever heard of me. Lovell committed perjury by denying this. I then sent him two technical interogatories and held the best for the last. The jury trial date was October 3, 1997, and late that August, I fired that one off. Knowing that he had to stay within NASA's "party line", I designed the questions accordingly.

In response to one question which asked for his official radiation exposure for his two trips to the Moon, he answered," .4 rem", which is 400 millirem. The time required to pass through this belt is over an hour each way. He spent at least six hours in transit and according to Van Allen, his exposure had to range between 60 and 240 rem. And that was just getting this human guinea pig through the Van Allen shield.

Then Liar Lovell's attorney, probably fearing the jury, raced to the judge and asked for a summary judgement. For reasons unknown, Bill didn't present my tight four page rebuttal which consisted of copies of Liar Lovell's letter to me and its envelope, the fact that he denied knowing me and also the evidence showing deep contradiction between his reported dosage and Van Allen's work on radiation. Instead, Bill handed in 22 pages of dribble. The summary was granted!

Which brings us to the fact that, by Lovell's own admission, if he actually went to the Moon then he was a human guinea pig. He was supposed to be on the first flight to go through the shield. There are no records of any flight ever sent through the shield carrying mammals. When Lovell was asked to provide me (Kaysing) with information of any such flight he claimed he didn't know of any. Would you send human guinea pigs,especially men with the right stuff, into a region which your instruments had pronounced to be a radioactive hell before you sent in monkeys or apes? No? Then why would NASA?

19.3 Dr. Frank Greening

Since I first started the research that led to this book, I have been searching for absolute proof that James Van Allen's original research, on what was to be called the Van Allen Belts, was correct. He found radiation that sent his Geiger counters off scale, radiation high enough to be lethal to humans who passed through.

After almost a decade of searching (chronicled in this book) Dr. Frank Greening of Ontario, Canada has shared his work with me by giving me some of the following research and the radiation values of the Van Allen Belts. As usual, opinions are mine!

As you read this, bear in mind that even the government agrees that a maximum lifetime dose is 25 rads and that death always begins after 500 rads. In addition, this information has also allowed me to safely conjecture about the radiation in the region of space past the Belts and between Earth and the Moon.

From the pages of an article "Radiation Protection During Space Flight" which was found in the 1983 "Journal of Aviation, Space and Environmental Medicine", Dr. Greening, extracted this statement "Dose equivalent rate from electrons in the heart of the Van Allen Belt is 280,000 rad per day." Dividing by the seconds in a day we find 3.2 rads per second. The only unanswered question here is, "How wide is the heart?"

From the McGraw-Hill "Encyclopedia of Science & Technology, Vol. 19, pages 163–167, I found additional information and scale sketches of the Belts which are basically composed of an inner ring and an outer ring. The inner ring, which starts at about 4,500 miles out and extends to 6,400 miles, is much more active than the outer ring. Judging by the shading of the drawing which shows relative intensity of flux, 1900 miles of this ring, about half (950 miles) should be considered the "heart"!

The 3.2 rads/sec doesn't sound like much until you realize that eight seconds gives a life time maximum dose and in less than two minutes, a death sentence. Because a return trip is involved, it leaves us with a minimum travel time of three minutes. At a ship speed of 11 km/sec (6.8 miles/sec), you would be dying upon reentry whether outer space contains radiation or is as radiation free as NASA claims it is.

Since the "heart" of the Belt is 950 miles wide anyone claiming to have made the trip twice would have traveled 3800 miles in the "heart" of the Belt which would have taken 588 seconds for a total exposure of 1790 rads. Broiled astro-not anyone? Oops! Liar Lovell (Apollo 8 and Apollo 13) just received three absolutely fatal dosages in two short years.

He was still very much alive in Sept. 1997 when Bill Kaysing sued him for libel. This is only one of the reasons why I call him Liar Lovell. Any Apollo astro-not who claims to have gone through the shield is a liar.

Before we enter the next section, bear in mind that the radiation dosage formula is Q * number of rads. Q ranges from 1 for the lower powered particles encountered in the belts, to 10 for the highest powered particles encountered during tremendous solar storms in space. A Q of one shows that even the low level particles must contribute radioactivity and induce damage to life forms otherwise Q should start at zero.

In a prior related article Dr. Greening examines the results of "Operation Argus", a secret U.S. Military experiment of 1958 in which a number of atomic bombs were fired on the edges of space shortly after the discovery of the Van Allen Belts.

Argus I, a 1.7 kiloton blast, on Aug. 27, at an altitude of 160 km. Argus II and Argus III, fired on Aug. 30 and Sept. 6, were also low yield blasts. Argus was succeeded by Project

Starfish in 1962. On July 9th, some 4,000 km. above the Earth a 1.45 megaton bomb was fired. It created a new Van Allen Belt having a radiation of 45 rads/sec. It had been theorized that the new belt would decay in a matter of months but in reality, it persisted for a decade. Any astro-not claiming to have passed through would have also run into whatever of this radiation was left from the Starfish blasts.

Over 30 years have passed since Liar Lovell "Mooned" us and to this day not a single astro-not has ever spoke of the brilliance of the stars nor taken photos of them. If the recent copies I received from NASA of the three color photos used in this book are any indication, by now, NASA does have proper photos of the stars. The "C" rock is now unmarked, the size of an 8 x 10 has been reduced to 6 x 5 and the optical quality has been greatly reduced. In a world of digital photos anything becomes possible.

By the same token, NASA's position on space radiation has never wavered. They claim that there is no harmful electro-flux in the great beyond except during that once in a century tremendous flare. They deny Van Allen's leaky bucket description because he believed that it was mainly the Sun that was responsible for the trapped radiation.

However, the Argus experiment proved that radiation can be added from sources exterior to the belts and then be scrubbed away by natural process. Unless the scrubbing is magically limited only to bomb blast radiation, the natural belt must also be decaying at a similar rate. If the artificial radiation took a decade to disappear isn't that a decay rate of approximately 10%? Am I wrong to conclude that at least, 10 % of 3.2 rads/sec must be continuously added?

There would soon be no natural radiation in these Belts unless it was constantly being renewed by something. Since there is nothing between the Sun and us I must assume, just like Van Allen before me, that most of this radiation is created by the Sun. The stars, because of their distance, can only contribute occasional high powered cosmic ray. If all stars are driven by similar process, I will predict right now that the ratio of solar to stellar will be at least 500 to 1 in favor of the Sun!

Consider Apollo 17, which at 12 days long was the longest flight made. There are over one million seconds in 12 days. At .32 rads/sec the total exposure for each astro-not would be 320,000 rads. A one year trip to Mars anyone?

The solar wind is composed of high velocity protons and electrons which were ejected from the Sun's flares. Slashing through this are occasional heavy doses of X-rays whenever there are large flares. Protons will also create radioactive damage. Since the only difference in flares seem to be their size, the little ones must also create radiation? If so, why are we not being told.

As discussed earlier in this book, we must also remember that even medium solar flares can produce thousands of rads per second with Q factors pushing 10.

Let us consider a reservoir that always contains 100,000,000 gallons despite use. Would anyone dare claim that the input from all sources isn't at least that much over the same time frame? No matter how we look at it, space must be a deadly sea of radiation that no suit and thin hull combination, no matter the materials used, can defeat. John Mauldin wrote that two meters (6 feet) of water was necessary and he wasn't kidding!

There is a complete lack of data on flights that carried life forms through the shield prior to Apollo 8 and its cargo of three great apes. However, if you search NASA biology on the Internet, then grab NASA Life Sciences Data Archive, then grab OVERVIEWS, then grab Unmanned Missions you will see 8 biology flights listed. Unfortunately, for NASA, this data absolutely proves my thesis that Liar Lovell (and his crew) had to be the first life forms to go through the shield. Another strange fact is that the flight data isn't listed. That guarantees that all were under the Van Allen Belts. The first flight listed is Bion 3 and it lifted on Nov. 25, 1975. This is over 6 years after Apollo 8 mission. I think that this really lets the "Moon cat" out of the space sack! Now some genius at Stanford, Martin Walt, speaks of "perturbing our reservoir" (the Belts) by blasting off more high powered A-bombs in space so that we can determine exactly how the radiation input and output relate. A much safer, cheaper and easier way would be to orbit a satellite just past the shield and measure the radiation coming toward Earth This would also tell us the exact ratio of solar to stellar radiation.

Not only would we have proof positive instead of what is now just theoretical bull shit, we would also not have added to the world's radiation problem.

Found in the text of McGraw-Hill's pages is a statement to the effect that intense precipitation of electrons and protons reduces our ozone layer. Can it be that the Alaskan "HARPP" project which injects tens of millions of watts daily (enough to solve California's on going power problem) into and through our ionosphere is helping to destroy the ozone layer by manipulating the Polar Wind for climate control?

At the turn of the century, before we made the bomb, and before we ruined both our food and our water with radioactive particles, chemicals and pollutants, only about 2 % of our people died from cancer. Today, that number is over 60%.

If volcanoes can and do layer the planet with their dust after every big eruption, it doesn't take an atomic physicist to see that space bombs must also distribute their radioactive wastes all over the planet. In that case, Martin Walt, spare the bombs and spoil the cancer!

20 THE MARS LANDING ADDENDUM

The Great Martian Landings began August 20, 1975 with the Viking 1 probe when it was launched toward Mars. Previous probes had established that Mars had no magnetic field nor any Van Allan type solar radiation shield. It was also known to have a very thin atmosphere, 97 % of which is carbon dioxide. My Chemistry & Physics Handbook shows the Martian surface pressure to be only .006 that of Earth and this is virtually a vacuum! With no magnetic field, no Van Allan shield, and with no thick atmosphere, the Martian surface identical to space is ravaged by every solar flare that burps from the Sun. Not only can the larger flares produce hundreds of thousands of rem in a few short hours, but many times their particles are thousands of times as powerful as those found inside the pit of an atomic power plant.

In this book I used the NOAA (National Oceanic & Atmospheric Administration) solar records to show that there were 134,793 flares during the 25 year period from January 1967 to January 1991. This gives us 300 months, with a monthly average of 449 flares a month. Of these, John McKinnon, NOAA's own solar flare expert writes, "Probabilities of the order of 1% are considered low with respect to class X flares."[1] Imagine that? NASA is searching for life on a surface that is scoured 1.5 times a day by X rated flares. Sure it is!

NASA as usual, misdirects us by claiming that the Martian surface pressure is less than 1 % than that of the Earth. In actuality, it is less than one tenth of 1 % of the surface pressure of Earth. The Martian pressure is equivalent to Earth pressure at about 37 km or about 120,000 feet which is higher than most clouds and almost as high as a huge balloon can go when carrying a few pounds of instruments. There is simply not enough matter at that pressure to provide any real lift. If the air can't lift then it can't be used to billow out a parachute. Any chute deployed at this altitude here on Earth would stream and once it streams it never fills. Therefore, parachutes on Earth are limited to much lower altitudes.

On July 14, 1976 the orbiter modual which weighed 5,125 pounds detached its lander. I can find no listed weight in my encyclopedia on space but since it could carry carry up to 638 pounds of fuel in addition to its payload that lander had to weigh at least 1000 pounds.

NASA claims that after the lander was detached rockets were used to slow it down to 560 mph at an altitude of 800,000 feet. Then it was allowed to fall 781,000 feet under

[1]NOAA TECHNICAL MEMORANDUM, ERL-22, McKinnon, Dec, 1972, Dept of Commerce

Martian gravity before a parachute was deployed at 19,000 feet. At 4,600 feet this chute was detached and NASA tells us that it then had a velocity of 145 mph. Rocket engines under computer control then landed it.

Martian gravity is about .37 that of Earth. Earth's gravity accelerates an object at 32 feet per second. This gives Mars the ability to accelerate an object at 11.84 feet per second. The 560 miles an hour horizontal motion will not affect the downward velocity of an object that falls 781,000 feet on Mars.

The terminal velocity at the time the chute was deployed was about 4,300 feet per second (which is almost 3,000 mph.) That's much faster than a speeding bullet. NASA claims that in a matter of 14,400 feet that chute operating under near vacuum conditions reduced the lander's speed to 145 mph. Sure it did! That was then; let's look at now.

The next probe to land on Mars did so on July 4, 1997. NASA tells us that the "Pathfinder" came in at 16,600 mph and was then jettisoned to boldly plunge into the fringes of the Martian atmosphere without using retrorockets to enter orbit. As usual, their were two different histories given by NASA. The first states that by some miracle during the next minute its speed was reduced to 1,000 mph.[2] The second states that it was jettisoned at 5,300 miles and its speed was reduced in 30 minutes while it fell to 80 miles.[3] In the first case the de-acceleration would have been incredible. However, in the second case the Pathfinder would be at the 80 mile high place still doing 4,280 mph. The NASA story gels murky, but it is assumed the Pathfinder was again allowed to free fall until it was 7 miles high when NASA claims the parachute opened. Instead of streaming because it had been popped in almost a vacuum, it billowed forth and slowed the Pathfinder down. "When it was one mile up it dropped the chute, blew up the airbag, and fired retrorockets reducing its speed to 23 mph. Then the air bag hit the ground, rocks included and bounced either 3 times(3) or 16 times[4]."

Then the roving Martian machine's Earth Master, Michael Malin, who works for Space Science Systems, Inc. was able to watch its images for a continuous 24 hours.[5] Since all space transmissions arc done by line-of-sight frequencies, and because both planets rotate, this is patently impossible. The only way this could happen is if they dropped off at least three geo-stationary satellites above the Martian equator before they landed the Pathfinder. I think the NASA liars decided that this could happen because both planets have days of nearly equal length. Take two circles of paper and put a dot on each nearest each other. Then rotate each paper 180 degrees (12 hours worth) and you will instantly see that each dot is hidden by it's planet from the other dot.

I guess in some similar manner NASA intends to bounce astronauts down to the surface of Mars sometime in the future, where they will once again gambol amongst the Martian

[2]New York Times 7/4/97
[3]New York Times 7/5/97
[4]Science News 7/12/97
[5]Science 7/11/97

life-forms that I'm sure the Pathfinder will soon find. That discovery will make it our duty to bounce down there and meet with these aliens so that we can invite them to our home to visit us.

NASA's appropriation was in committee and being discussed at the time of this perfect July 4th landing. You don't suppose ...? Nah!

I tried hard to believe that only the Gemini missions and the Apollo manned landings were a hoax and that all the rest of their exploits were true. Nagging at me was always the question, "When can you trust a known liar?" Now, I must believe that the answer to that question is never! The next time the Imagineers tell us they found Martian rocks, bear in mind that if they have nothing to compare them with how do they ever figure that out? It is axiomatic, if you can't land, you can't retrieve.

21 THE PRESS KIT ADDENDUM

This addendum was extracted from a NASA document originally issued as a press kit on Sunday, July 6, 1969. The release number is 69-83K. Twenty years later it was reissued as a "Souvenir Edition" on the twentieth anniversary of the Apollo 11 Moon landing. The title is "APOLLO LUNAR LANDING MISSION".

21.1 The Cold In Space

1. Nowhere in this full size 250 page document is there any worry or provision made for the cold of space. However, it does have statements about the arrangements made to counteract heat build-up. The first is found on page 15.

   "During the trans-earth coast period, Apollo 11 will again control solar heat-loads by using the passive thermal control "Barbeque" technique".

2. On page 104 we find this statement, "The primary coolant loop circulates water-glycol for temperature control of cabin and suit..., batteries (silver zinc), and electronic components ..."

3. On page 154 we are told that during the long lunar nights that the temperature drops as low as -279 ° F and that the seismometer needed an auxiliary heat source to keep it no lower than -65 ° F. This worked out to two heaters with an output of 15 watts apiece. Each heater used 1.2 ounces of plutonium 238 and the exploded drawing showed no way to turn it off. If this much heat was needed to keep the unit 200 ° F hotter than the outside during the lunar night, why shouldn't that same amount of heat have added 200 ° F to the unit during the daytime? The Moon's mid-day surface temperature is 243 ° F and that unit should have been well over 450° F at midday. Try baking the guts of your radio in a 450 ° F oven for a few hours sometime!

21.2 The Photo Equipment

1. On page 79 NASA lists all the photographic equipment and accessories carried on the LEM. There are no flash units listed. On page 80 we find that the close-up fixed

focus camera did indeed have a flash, but it was only used for taking special stereo photos of the surface.

21.3 The Space Suit

1. On page 117 NASA claims that the space suits were pressured at 3.9 psi with pure oxygen. I have great reservations that a human can remain active for a sustained period at this pressure. Then they tell about a full body, pressure bladder that over lays a nonex comfort layer. That's great for the body, but what about the hands, feet and head? Did they make little pressure bladders for them? If not, how did they seal the extremities; especially the neck, not to mention the hands, feet or head? Let's face it, a pressure band around any part of the body is called a tourniquet.

   A wrist watch even compresses the skin a bit. Squeezing some part of the body, while a total vacuum sucks at the others, should quickly cause trouble to any organism. I defy NASA to demonstrate the pressure bladder at 18.6 psi (3.9 psi positive) on a live TV show. Since you can't trust a known liar. I will provide the brand new, s till sealed in boxes pressure guages to stop them from using an ounce or two of pressure and calling it 3.9 psi.

21.4 Real Time Commands

1. This is found on page 105. "Although no real time commands can be sent to LM-5 and subsequent spacecraft, the ..." But according to Harry Hurt on the bottom of p. 70 in this book, it was ground based radar doing that work in real time. In the the fourth paragraph on the very next page, you can see that NASA sure had authors Murray & Cox fooled!

2. On page 105 of the Press Kit, NASA also claimed that the landing radar provides altitude and velocity data to the LM's guidance computer. I know that on-board radar can gauge altitude, however, how can it clock the velocity? Velocity is the rate at which you change your position. To do that you need a ground-based reference point, and to acquire these on the Moon would have called for a special mission to land a number of probes on the Moon beforehand. The only reference points they could have had were here on Earth, 240,000 miles away!

22 THE SHADOW KNOWS ADDENDUM

In October 1995, Joe Nieroski sent me a letter suggesting I examine the Apollo photos for shadow lengths that did not show the Sun's true elevation according to date, time and position. I misplaced the letter. Four months later Ray Labonski had an idea that the terminator line (day/ night division) on the Moon might let him determine whether shots of the Earth taken from the Moon were phony. That's when I had my "brain storm"! I decided to examine the Moon photos for shadows the Sun couldn't have made because of date, time and position. Using spherical trig I could calculate the Sun's elevation above the lunar horizon to determine whether the shadow lengths for a given object were too short or too long for the time frame of when the astro-nots were supposed to be gamboling on the Moon. All I had to do was renew my spherical trig and celestial navigation skills.

My knowledge of spherical trig began when the onset of arthritis brought my very active lifestyle to a screaming halt. To keep my sanity, I began to design a 50 foot sport fishing boat using semi-submersible hulls. The design was so promising that I knew that a boat of this type (if specially fitted) could easily break the self-contained small boat trans-atlantic speed record. Since a speed record was dependent upon staying on great circle routes, I began to study celestial navigation and discovered that conventional navigation was difficult to learn by my usual do-it-yourself methods.

Navigation by non-electronic means requires an accurate time piece, a sextant, a current "Nautical Almanac", local charts and the purchase (each year) of a number of books filled with tables. These tables are solutions to tens of thousands of spherical triangles, all calculated by the use of spherical trig. Determined to learn spherical trig I took a batch of applicable math books home from the library and again encountered difficulty. The pace of the do-it-yourself method is usually slow because text books are written by people more interested in impressing their peers than teaching their readers. I was on the last batch of books the library owned (still hopelessly entangled) when one author made a fatal error. He compared spherical trig with plane trig and mentioned that both are based on the relationship between the sides and the included angle. The veil lifted and in the next 10 seconds, I became a spherical "trignominist".

During that period of pain, I also invented the Inversa-sphere which is a mechanical method of celestial navigation utilizing the inside of a hemisphere that contains latitudinal and longitudinal grids. The concave surface allows smaller compasses to give the same accuracy obtained by working on a larger sphere when drawing the navigation LOP's

(Lines of Position), as shown in chapter 7. By inspiration, one day I also developed a new navigational system that eliminated the necessity of buying the books of tables each year. My method only required a sextant, clock, Nautical Almanac and a scientific calculator to determine a geographical position using spherical trig.

I went to the local library to review spherical trig and copied the formulas necessary to calculate the Sun's elevation for each of the alleged Moon landings and lift-offs. The exact time of new moon for each of the Apollo missions determined the amount of the Moon's rotation from that time until the Lunar landings and take-offs were made. Since mission time was reckoned from the instant of lift-off from Earth, I also needed accurate times of lift-off and the lunar latitude and longitude of the various landing sites. At my local library I found discrepancies.

The Newark Library beckoned, and, following its siren call, I discovered that their books contained similar discrepancies in sites and times. NASA, which has always assured us that it knew within a few yards where everything was, couldn't keep proper time or record the sites exactly! There were two missions for which exact time was not supplied, but I was able to calculate it within a few hours. I wrote to NASA to see what it had to say about discrepencies, but I expect zero help from that direction. If NASA stays true to form it will never answer. In the meantime, I used the locations and times I have available.

The unanswered question is why is this data not accurately listed in technical space encyclopedias? Accurate astronomical data on the time of the new moon for each mission was found in the appropriate "Nautical Almanacs". The Handbook of Chemistry & Physics gave me the inclination of both the Moon's polar axis and its orbit. The polar tilt is 1.537°; and the orbital inclination is 5.12° to the ecliptic. Also given is the period of rotation which was 2,360,550 seconds or 27.32 days. This gives a lunar rotation of 13.176 ° per day.

The last two items in the first line of the mission data chart show the elapsed hours from the blast off from Earth to the Moon landing, and the Moon lift-off. The second line shows the date and time of the preceding new moon and then the days and hours to the landing and blast-off. The third line shows the total days and hours from new moon to the start time. The fourth line has the total hours from new moon to both Moon landing and Moon lift off. The fifth line shows the total hours of rotation since the new moon.

APOLLO 11 – MISSION DATA				
	Site	Start Time	On Moon	Off Moon
Apollo 11	01°N - 23°E	07/16/69 - 1300	+100 hrs	+124 hrs
New Moon	*	07/14/69 - 0500	04-04	05-04
Days & Hours	*	02-08	02-08	02-08
Total Days	*	*	06-12	07-12
Rotation	*	*	06.5	07.5

APOLLO 12 – MISSION DATA				
	Site	Start Time	On Moon	Off Moon
Apollo 12	03°S - 24°W	10/14/69 - 1600	+110 hrs	+142 hrs
New Moon	*	10/09/69 - 0500	04-14	05-22
Days & Hours	*	05-10	05-10	05-10
Total Days	*	*	10-00	11-08
Rotation	*	*	10.0	11.3

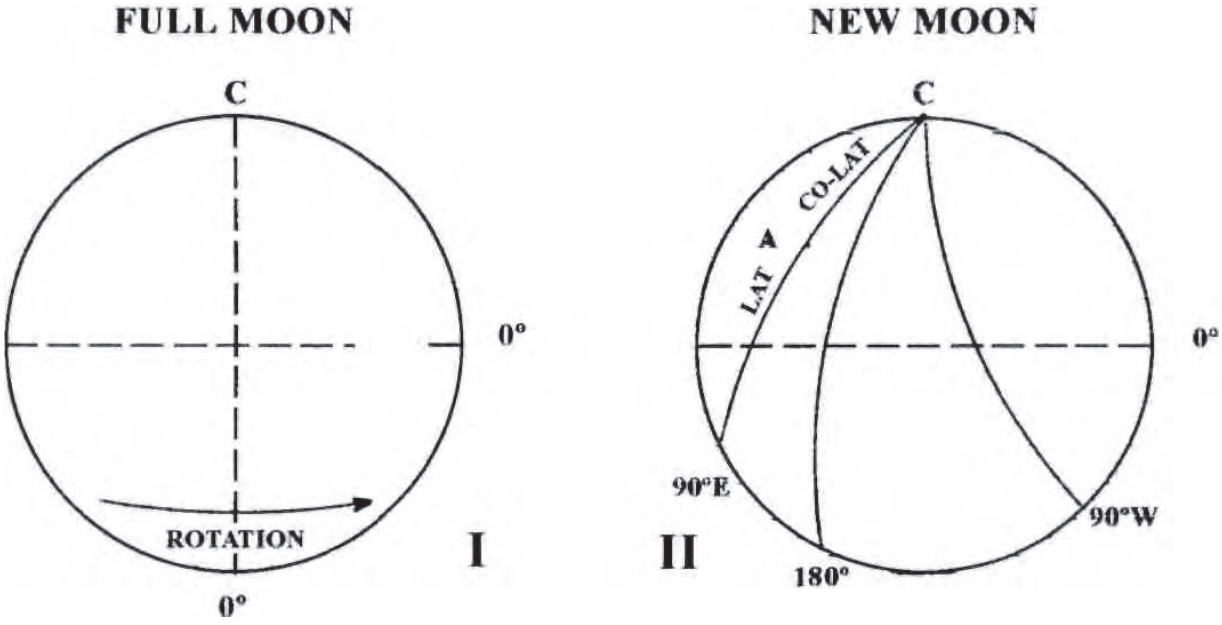
APOLLO 14 – MISSION DATA				
	Site	Start Time	On Moon	Off Moon
Apollo 14	05°S - 15°W	01/31/71 - 2100	+108 hrs	+142 hrs
New Moon	*	01/26/71 - 0900	04-12	05-22
Days & Hours	*	05-12	05-12	05-12
Total Days	*	*	10-00	11-10
Rotation	*	*	10.0	11.4

APOLLO 15 – MISSION DATA				
	Site	Start Time	On Moon	Off Moon
Apollo 15	05°N - 02°E	07/26/71 - 1300	+104 hrs	+171 hrs
New Moon	*	07/22/71 - 0800	04-08	07-03
Days & Hours	*	04-05	04-05	04-05
Total Days	*	*	08-13	11-08
Rotation	*	*	08.5	11.3

APOLLO 16 – MISSION DATA				
	Site	Start Time	On Moon	Off Moon
Apollo 16	09°S - 15°E	04/16/72 - 1800	+104 hrs	+175 hrs
New Moon	*	04/13/72 - 0100	04-08	07-07
Days & Hours	*	03-17	03-17	03-17
Total Days	*	*	08-01	11-00
Rotation	*	*	08.0	11.0

APOLLO 17 – MISSION DATA				
	Site	Start Time	On Moon	Off Moon
Apollo 17	20°N - 31°E	12/07/72 - 0500	+110 hrs	+185 hrs
New Moon	*	12/05/72 - 0300	04-14	07-17
Days & Hours	*	02-02	02-02	02-02
Total Days	*	*	06-16	09-19
Rotation	*	*	06.5	09.7

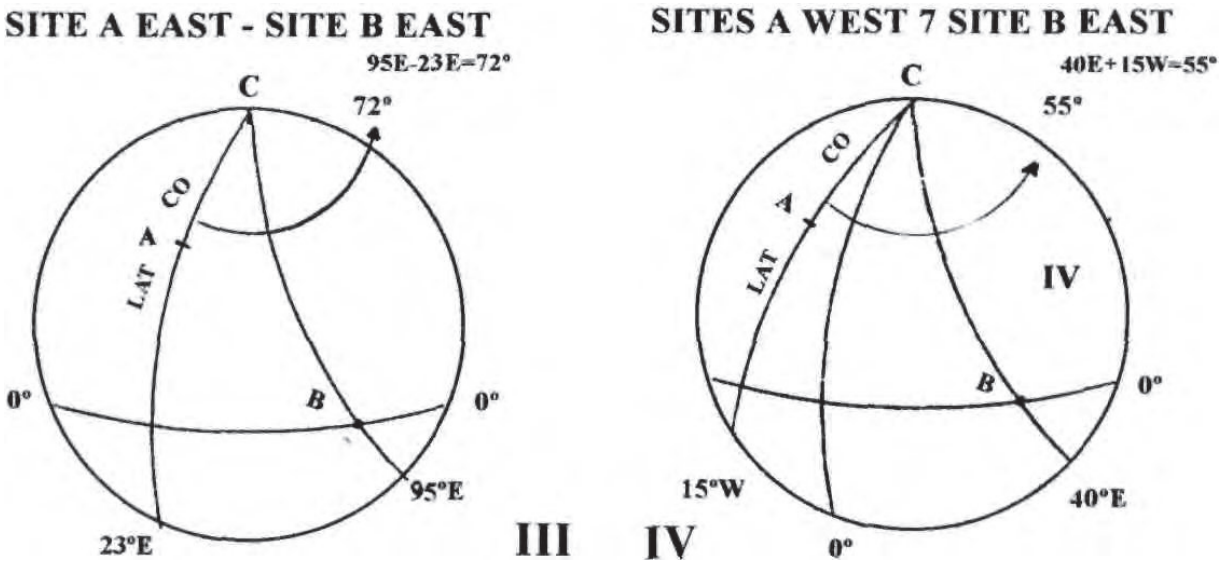
Sketch # I shows the full Moon. The exact middle of the face we see is zero longitude and always faces toward Earth. Therefore, the 180th longitude must be facing the Sun at the instant of new moon. Sketch # II shows the rear side when the Moon is new. Point C represents the pole of rotation. This sketch is a schematic that shows the impossible because the spread of longitude is 180° apart. Point A represents a landing site. Notice that there are two labels on that line of longitude. One is LAT, which stands for the latitude or the angular measurment from the equator. The other is CO-LAT, which stands for co-latitude and is the angular measurement of the site from the pole at point C. If the latitude is North then the CO-LAT is equal to 90 - LAT. If the site's latitude is South, the CO-LAT is the LAT + 90.



Since I can only estimate the Sun's elevation to within a couple of degrees, and since the Sun's displacement of plus or minus 5° results in less than a 1 degree difference in elevation, I can ignore both polar tilt and inclination and always use the lunar equator for one of the parameters of the Sun's geophysical position. Without entering NASA's archives and physically submitting my body to their control, I have no way of determining the exact times the various photos were taken. I can only compare them by calculating the extreme geophysical positions of the Sun for the day and hour of each Moon landing and lift-off.

First, I will calculate the Sun's position during the Apollo 11 landing. Under the heading "On Moon" in the mission data chart, we find that the landing took place 6.5 days after the new Moon. We multiply that figure of 6.5 days by the rotational rate of 13.176° per day and get 85°, which we subtract from 180° to find the longitude of the Sun was 95°E. The rotation is always the days elapsed times the angle of 13.176°. The new longitude is always 180° minus the determined result. Using the same procedure I calculated a l l the Sun longitudes for all the landings and liftoffs as shown in the polar angle chart.

The next step is to determine the angle of separation between the Sun site and the landing site. Because both sites are the same longitude (East), we subtract the site (23°E) from (95°E) and we get a polar separation angle of 72°. I repeated this process for the time of lift-off and found the polar angle was 58° (81 E - 23 E). In Sketch # III, we see the reason for the subtraction. In Sketch # IV when the longitudes are opposite we add the longitudes to obtain the separation angle.



APOLLO 11 — POLAR ANGLE CHART					
	Days	Angle per Day	Rotation	Sun's Long.	Polar Angle
Land	06.5	13.176°	085°	95°E	72°
Lift	07.5	13.176°	099°	81°E	58°

APOLLO 12 — POLAR ANGLE CHART					
	Days	Angle per Day	Rotation	Sun's Long.	Polar Angle
Land	10.0	13.176°	132°	48°E	72°
Lift	11.3	13.176°	150°	30°E	54°

APOLLO 14 — POLAR ANGLE CHART					
	Days	Angle per Day	Rotation	Sun's Long.	Polar Angle
Land	10.0	13.176°	132°	48°E	63°
Lift	11.4	13.176°	118°	30°E	45°

APOLLO 15 — POLAR ANGLE CHART					
	Days	Angle per Day	Rotation	Sun's Long.	Polar Angle
Land	09.0	13.176°	112°	68°E	66°
Lift	11.8	13.176°	148°	32°E	30°

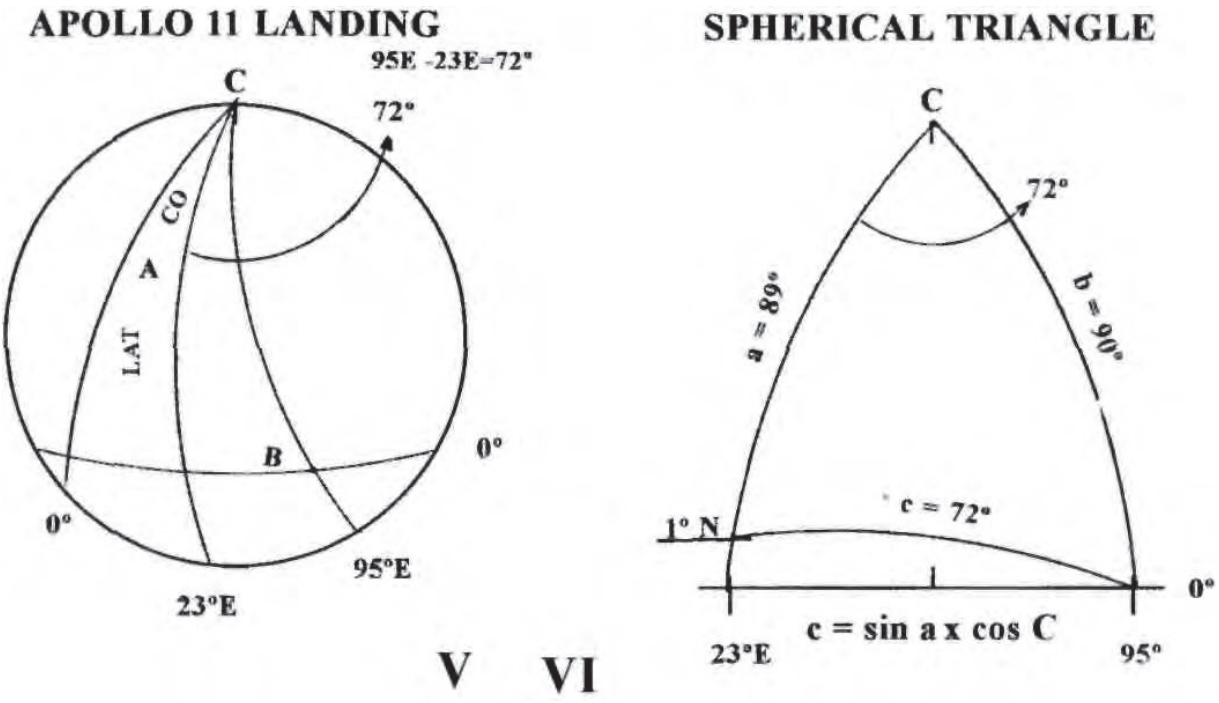
APOLLO 16 — POLAR ANGLE CHART					
	Days	Angle per Day	Rotation	Sun's Long.	Polar Angle
Land	08.0	13.176°	105°	75°E	60°
Lift	11.0	13.176°	145°	35°E	20°

APOLLO 17 — POLAR ANGLE CHART					
	Days	Angle per Day	Rotation	Sun's Long.	Polar Angle
Land	06.5	13.176°	085°	95°E	64°
Lift	09.7	13.176°	128°	52°E	21°

The lowercase letters and functions stand for arc distance from the pole and are called the co-latitudes of the sides; the uppercase is for polar angle C. In Sketch # V we plot the Apollo 11 landing site A (1°N) to the sun site B using line c. Once we draw side c we have formed the basic navigational triangle. The two sides are formed by the co-lat of site A and the co-lat of site B while C is the angle between the two sides and side c is the final enclose. This is now a spherical triangle. The basic equation used for spherical triangles when 2 sides and the polar angle are known is of this nature :cos c = cos a • cos b + (sin a • sin b • COS C) where c equals the arc separation distance of landing site from the Sun.

Because side b is always 90° and the cosine of 90° equals 0, we can eliminate the first half of the equation. We are left with cos c = sin a • sin b • Cos C. However, since the sine of 90° = 1 we can also drop sin b. The final equation is the greatly simplified: cos c = sin a • Cos C. Naturally the acos of cos c equals the arc distance. In each case, for a single mission, side a of the triangle will be 89° because the landing site remains the same.

In Sketch # VI, I used a type of schematic I created 20 years ago to represent the spherical triangle. This helps me visualize the arc separation distance before beginning the calculation. I label point C (the polar angle) 72°. Since the two sides are measured from the pole in degrees, we must introduce the term co-latitude. The co-latitude of the site (side a) is the arc distance form the pole which is 90° - 01° or 89°. Since we are assuming the Sun to be on the equator the co-latitudeof the Sun (side b) is 90°.



The arc separation of the Apollo 11 landing is found by multiplying the sine of 89° by the cosine of the 72° polar angle. This calculates to a little over 72°. The Sun's angle of elevation at that time was 90°-72° or 18°. All the other landing and lift-off calculations are identical. The Apollo 11 lift-off is found by multiplying the sine of 89° by the cosine of the 58° polar angle. The arc distance here is a little over 58°. Therefore, the Sun's elevation at that time is 90° - 58° or 32°. By similar calculation I found the Sun's elevation at landing and lift-off for the other missions.

SUN ELEVATION CHART		
	Land	Lift
Apollo 11	18°	32°
Apollo 12	18°	36°
Apollo 14	27°	45°
Apollo 15	27°	57°
Apollo 16	30°	68°
Apollo 17	24°	61°

The photo of "Gotcha #1" on page 180 shows that Aldrin's shadow was produced by a Sun that was 34.9° above the horizon. The Sun's maximum elevation for that trip was 32°, but a difference of 2.9° is not enough to be absolutely certain. However, if we consider that the salute ceremony was one of the first items of business each time they landed, and was performed in the first 6 hours on the Moon, we have a Sun elevation of only 22°. The difference here is almost 15°. It is very significant to be well beyond any possible error.

This single photo is enough to destroy forever NASA's claim of landing astro-nots on the Moon.

On page 34 there is a photo that shows the shadow from the foot pad on the Apollo 14 LEM. The measurements of the height of it arc 0.21 inches. The length of the shadow is a minimum of 0.91 inches. Since the tangent of the angle is found by dividing the height by the length, we find a tangent of 0.023. The atangent of this is the angle of 13°. However, the Sun was already 27° high when they landed and 68° when they lifted. If they raced outside and popped that picture they still would have missed by 13°. If they waited an hour or so the difference increased. This discrepancy is also very significant.

The cover photo also has a shadow descrepancy. Pete Conrad, shown in the reflection on Bean's faceplate, has a shadow that clearly shows his crotch. To the best of my measuring ab ility I find that the height of his crotch from a line connecting his heel is 0.140 inches. The length of his shadow from that same line is 0.142 inches. The tangent of the angle is 0.9859 which gives us an angle of elevation of 44.59°. However, the maximum height of the Sun when they left was only 36°. Oh dear!

I have no doubt that all these Sun angles were pre-calculated by NASA, but something obviously went wrong on the film set. Perhaps the head cameraman had an artistic hissy fit and changed the main lighting angle for dramatic effects. All I know for sure is that neither of these photos were taken on the Moon. And, if these were faked — why not all the others?

The Apollo 16 mission landed when the Sun was 30° above the horizon and had been continuously heating the ground for over 8 days. In the NYC area the Sun is that high at the winter solstice. Anyone who works outside or goes s k iin g can tell you about the amount of heat that you get on a clear day. The astro-nots stayed until the Sun attained an altitude of 68°. In the NYC area the Sun gets that high in July. When I designed a solar collector many years ago I knew I needed to take the overhead Sun as unity (enough to heat the lunar surface to 250° F) so the heat varies as the cosineof 90° minus the altitude. Therefore, at 30° of elevation the heating effect is 50%. At 68° it is 92%. How hot is the lunar surface after being baked for 11 days straight with no night to let it cool down? How long does it take until the surface of the Moon (and the LFM) is 200° F? I wonder if these astro-nots also lost sleep because their LEM was too cold?

23 THE NASA PHOTO ADDENDUM

In 1992 I originally predicted that NASA would find a way to "lose" the three color photos used in this book. You saw this mentioned in the "Author's Notes", footnote 1. I also predicted that the photos would be obtainable. They are and are not. Read on!

The ink was barely dry on my first edition when I tried to get extra copies of the three colored photos. For $13 apiece they had the gaul to send me three 8 by 10 glossy full color optical quality photos of their choice. When I sent them back to get either my money or the right photos they sent me the money and informed me that I would have to give them the new NASA numbers.

When I asked for the list of the new numbers I was told, "We lost the cross-over index."! Gee! I wonder why a mission numbering system in place for 23 years was suddenly changed?

Sometime during '99 I tried again. This time I was told that the photo sales had been privatized and that the Bara-King Studios in Maryland now supplied the photos. In February, 2000, since I still couldn't get the "lost" index I sent Bara-King Studios black & white copies along with $15 apiece for the three, 8 by 10 optical quality glossy full color photos you see in this book.

They sent me the right photos. However, the photos were not 8 by 10 optical quality glossy full color photos. Instead, they were computer derived showing grainey, blurred colors. In addition, the "C" on the rock had been brushed out , and the size reduced to 6.75 by 7 inches.

I screamed and yelped fo my money back which they immediately returned. I kept the photos and sent them a copy of this book so that they could see for themselves what NASA did. So ends the saga of the "lost" numbering system.

24 THE BEST FOR LAST ADDENDUM

From day one of writing this book, I sort of felt sorry for the astro-nots involved in the Apollo missions because I thought the devil (CIA) may have made them do it. However, since Jim Lovell lied on the interrogatories for a libel suit against him by Bill Kaysing, I have consistently called him "LIAR LOVELL". Now we can visually prove that all of the Apollo astro-nots were willing accomplices and therefore, all of them are liars!

On Tuesday 4/25/00, I attended a video premier in Nashville, Tennessee hosted by Bart Sibrel of Absolute Video. Bill Kaysing and I were the guests of honor because this video used much of the information Bill and I spoke of during the long interviews he had of us filmed years before for a documentary. He worked on it almost three years and last July (1999), he stumbled upon NASA footage of the Apollo 11 missions that contained the smoking gun. I suspect that the original interview video is now history along with the fact that he promised to credit us as authors prominantly display our respective books and tell his viewers how to find us. Somehow, we became his researchers and his credits fly by so fast you would need to stop the motion to see our names.

Later still he found two other sets of NASA footage that showed the bullets being fired. These two sequences with their title slates were the first thing we all saw that day. None of this had yet been woven into the video. The dates on both slates showed that this footage was filmed days before they left for the Moon. One video showed the landing we later watched and the other an astro-not (one liar or another) gamboling on the Moon. The important phrase is: "days before they left"!

The first NASA footage he found in July is included in his video "A Funny Thing Happened On The Way To The Moon". This is the title I had used for my original manuscript and which subsequently became the "NASA MOONED AMERICA!" you are now reading. But I was only his "RESEARCHER"!

On July 19, 1969, Aldrin, Armstrong and Collins were supposed to be half way to the Moon. However, the video footage (date stamped July 19, 1969) shows them in a low Earth orbit (still under the Van Allan Belts) taking trick photos of the Earth to "prove" they were half way to the Moon. When you are in low Earth orbit (a couple of hundred miles) the Earth almost completely fills the portholes. The only photographic proof they could offer during the early days of the mission was to show the Earth shrinking in the portholes as they progressed. When you are actually halfway to the Earth's apparent diameter shrinks.

However, the NASA video shows that Collins, Armstrong and Aldrin were actually "shrinking" the Earth. At first, they had the camera lens near the porthole. Then they totally blacked out the ship (even the instrument lights) and began to slowly move the camera away from the porthole. Since the wall was now so dark we assumed that the wall was the porthole. In a few feet of the July 19 footage, we suddenly see the barely visible rim. We also see someone's arm accidentally get between the porthole and the camera lens. This proves that the camera is no longer close to the porthole. The footage is also in color after all the astro-nots involved (and NASA) swore that Apollo 11 carried no color cameras to the Moon.

Thinking about this, it is one of the few times the NASA liars have told the truth. That capsule never carried a color camera to the Moon because it never went to the Moon. And there you are ... I did save the best for last.

USA MANNED MISSIONS — MERCURY			
Name	**Dates**	**Mission**	**Crew**
Mercury 1	05/05/61	Ballistic	Alan Shepard
Mercury 2	07/21/61	Ballistic	Gus Grissom
Mercury 3	02/20/62	Earth Orbit	John Glenn
Mercury 4	05/24/62	Earth Orbit	Scott Carpenter
Mercury 5	10/03/62	Earth Orbit	Wally Schirra
Mercury 6	05/15/63	Earth Orbit	Gordon Cooper

USA MANNED MISSIONS — GEMINI				
Name	**Dates**	**Mission**	**Crew**	
Gemini 3	03/23/65	Earth Orbit	Gus Grissom	John Young
Gemini 4	06/03/65 – 06/07/65	Earth Orbit	Jim McDivitt	Ed White
Gemini 5	08/21/65 – 08/29/65	Earth Orbit	Gordon Cooper	Wally Schirra
Gemini 6A	12/15/65 – 12/16/65	Earth Orbit	Wally Schirra	Tom Stafford
Gemini 7	12/14/65 – 12/18/65	Earth Orbit	Frank Borman	Jim Lovell
Gemini 8	03/16/66	Earth Orbit	Neil Armstrong	Dave Scott
Gemini 9	06/03/66 – 06/06/66	Earth Orbit	Tom Stafford	Gene Cernan
Gemini 10	07/18/66 – 07/21/66	Earth Orbit	John Young	Mike Collins
Gemini 11	09/12/66 – 09/15/66	Earth Orbit	Pete Conrad	Dick Gordon
Gemini 12	11/11/66 – 11/15/66	Earth Orbit	Jim Lovell	Buzz Aldrin

USA MANNED MISSIONS — APOLLO					
Name	**Dates**	**Mission**	**Crew**		
Apollo 7	10/11/68 – 10/22/68	Earth Orbit	Wally Schirra	Don Eisele	Walt Cunningham
Apollo 8	12/21/68 – 12/27/68	Moon Orbit	Frank Borman	Jim Lovell	Bill Anders
Apollo 9	03/03/69 – 03/13/69	Earth Orbit	Jim McDivitt	Dave Scott	Rusty Schweikart
Apollo 10	05/18/69 – 05/26/69	Moon Orbit	Tom Stafford	John Young	Gene Cernan
Apollo 11	07/16/69 – 07/24/69	Moon Landing	Neil Armstrong	Mike Collins	Buzz Aldrin
Apollo 12	10/14/69 – 10/24/69	Moon Landing	Pete Conrad	Dick Gordon	Al Bean
Apollo 13	04/11/70 – 04/17/70	Moon Landing	Jim Lovell	Jack Swigert	Fred Haise
Apollo 14	01/31/71 – 02/09/71	Moon Landing	Al Shepard	Stu Roosa	Ed Mitchell
Apollo 15	07/26/71 – 08/07/71	Moon Landing	Dave Scott	Al Worden	Jim Irwin
Apollo 16	04/16/72 – 04/27/72	Moon Landing	John Young	Ken Mattingly	Charles Duke
Apollo 17	12/07/72 – 12/19/72	Moon Landing	Gene Cernan	Ron Evens	Jack Schmitt

USA MANNED MISSIONS — SKYLAB					
Name	**Dates**	**Mission**	**Crew**		
Skylab 2	05/25/73 – 06/22/73	Earth Orbit	Pete Conrad	Joe Kirwin	Paul Weitz
Skylab 3	07/28/73 – 09/25/73	Earth Orbit	Al Bean	Owen Garriott	Jack Lousma
Skylab 4	10/16/73 – 02/08/74	Earth Orbit	Jerry Carr	Ed Gibson	Bill Pogue

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